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PROCEEDINGS

OF THE

ILLINOIS

STATE DAIRYMEN'S ASSOCIATION,

AT ITS

FOURTH ANNUAL MEETING

HELD AT THE

City of Elgin, Ill., December 11th, 12, and 13th, 1877.

PUBLISHED BY DIRECTION OF THE ASSOCIATION.

ELGIN, ILL.:
THE DAILY NEWS STEAM PRINTING AND PUBLISHING HOUSE,
Post Office Block, River Street.

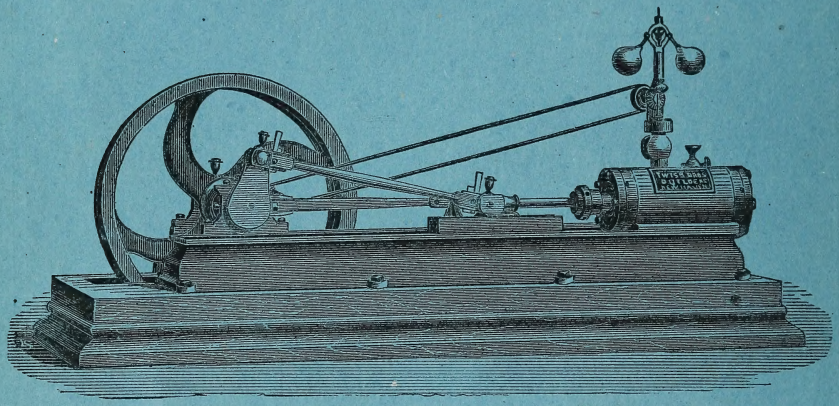
1878.

F. S. BOSWORTH,

No. 11 Chicago Street,

ELGIN, - ILLINOIS.

(Successor to Hawthorne & Bosworth.)



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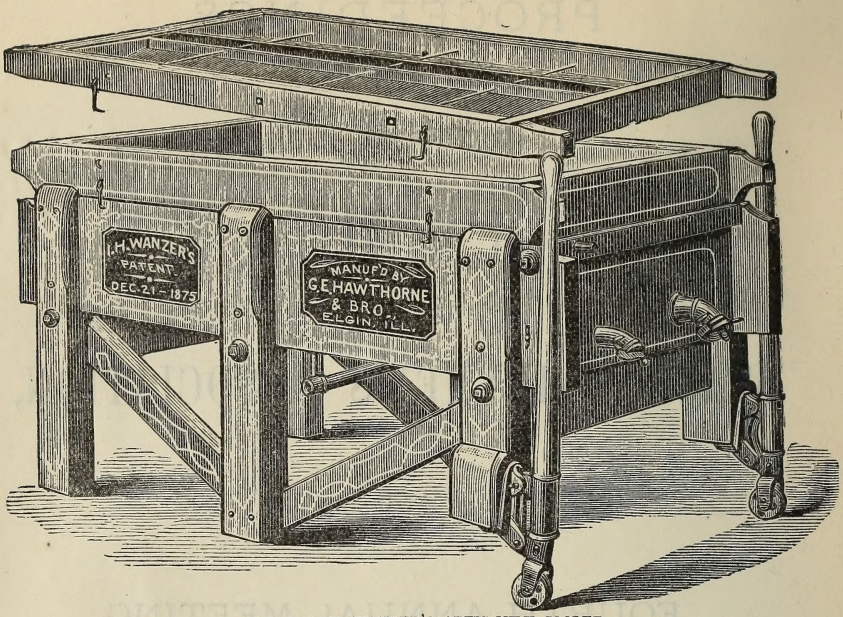

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FOR 1878.

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HON. WM. PATTEN, SANDWICH, ILL.

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L. W. LAWRENCE,
B. CORNWELL,
T. E. MUNN.

The fifth and next annual meeting of the Association will be held at the city of Elgin, Tuesday, Wednesday and Thursday, December 10, 11 and 12, 1878.

MEMBERS

OF THE

Illinois State Dairymen's Association

FOR 1878.

Adams, Guy	Elgin,	Illinois.
Breed, Gleason	Galesburg,	"
Boies, Israel	Davis Junction,	"
Bishop, Thos	Elgin,	"
Beckley, L	Nunda,	"
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Chapman, A. M	Burlington,	"
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Eldred, N	Gilman,	"
Ferris, C. J	Galesburg,	"
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Hall, F. H	Sugar Grove Industrial School,	"
Harley, H	Pecatonica,	"
Huntley, T. S	Huntley,	"
Judd, D. C	Sugar Grove,	"
Keating, John	Elgin,	"
Lovell, A	Sycamore,	"
Mead, H. W	Hebron,	"
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Mann, S. S.....Elgin, Illinois.
McGlincy, R. P.....Elgin, "
Parsons, S. B.....Flora, Clay County, "
Perry, J.....Chicago, "
Pearson, J. W.....Elgin, "
Patterson, Jas.....Kirkville, Missouri.
Seward, E. H.....Marengo, Illinois.
Spitzer, W. A.....Ontarioville, "
St. John, T. A.....Marengo, "
Scofield, D. C.....Elgin, "
Tefft, Dr. J.....Elgin, "
Thompson, M. H.....Elgin, "
Todd, Hugh.....Elgin, "
Williams, S. K.....Marengo, "
Wright, E. W.....Marteno, "
Woodworth, J.....Marengo, "
Wilson, H.....Elgin, "
Wattles, Homer.....McHenry, "
Wilcox, S.....Elgin, "
Wright, F. W.....Elgin, "
Wheeler, S. M.....Elgin, "

Standard Quantity and Quality of Milk.

QUANTITY.—Borden's Standard—of eight and five-eighths pounds per gallon—is now taken and accepted as the standard for milk, not only in our own country, but in all Europe.

QUALITY.—The Executive Committee of the State Dairymen's Association, after many experiments carefully made, have decided that hereafter the following shall be considered by them as the standard quality of milk in Illinois: Water 87.5; Solids 12.5; in a scale of 100 parts.

ILLINOIS
STATE DAIRYMEN'S ASSOCIATION.

FOURTH ANNUAL MEETING

HELD AT ELGIN, ILL., DECEMBER 11th, 12th, AND 13th, 1877.

ELGIN, DEC. 11th, 1877,
10 O'CLOCK, A. M.

The fourth annual meeting of the above Association was held at the Court House, in the city of Elgin, pursuant to call, DR. J. TEFFT, president, in the chair.

After some preliminary business, the organization was perfected and an adjournment taken to 1 p. m.

TUESDAY, 1 P. M.

Convention met and called to order as per adjournment. Whereupon the president delivered the following address of welcome :

DR. TEFFT'S ADDRESS.

FELLOW CITIZENS, GENTLEMEN OF THE ILLINOIS DAIRYMEN'S ASSOCIATION:—Through the kindness of an overruling Providence we are permitted to meet here again in convention, after the lapse of a year spent in various pursuits most congenial to our feelings, and, at the same time, we trust, in full harmony with our social relations to our fellow man.

Before entering upon the business of this convention, you will please

allow me, as an early dairyman of Illinois, and a citizen of this town or city for nearly half a century, to greet you, and extend to you, one and all, a hearty welcome to this hall, to this young city of ours, and to the hearts and homes of all well-wishers of this young, but rapidly growing, dairy interest in our vicinity.

It is with feelings far better understood than expressed that we again say we most cordially welcome you here amongst us, hoping and trusting, as we do, that your sojourn with us during the deliberations of this Association may prove most profitable to us all.

The agricultural profession (if we may deign so to call it), in our judgment, should stand at the head of all professions in a country like ours. It is the foundation rock; yes, the Azoic rock, on which are based all other professions, and without which all others would soon wither and fall to the ground. It is the fundamental basis of all prosperous towns and cities in this and all other civilized nations of the globe. Remove the agricultural interests from any community, kingdom or country, and they soon sink into utter insignificance.

Then placing this, as we do, as the corner-stone of all prosperous communities in the civilized world, we cannot see why it should not take a high position, and the agriculturist be so educated as to stand by the side of all other professions, if not head and shoulders above them.

The dairy, which is only a part of the great agricultural interests of this State, is fast growing in importance. But few years have elapsed since the establishment of the first Butter and Cheese Factory in this vicinity.

Look to-day at the great amount of dairy products manufactured in the northern portion of the State, almost vying with the other great agricultural interests of this portion of the same. Perhaps the southern portion of Illinois may not prove as remunerative in the production of butter and cheese as the more northern, but who knows this to be a fact?

But few years ago the country east of the Alleghanies was claimed to be the only dairy section of the United States. Some of the citizens inhabiting that section of our country politely informed us of the West that the West had outstripped the East in the production of the cereals, but that they had now embarked in the dairying business, and feared not the West as a rival in this branch of agriculture.

But how is it now? May we not say we fully believe that our fellow dairymen of the West have within the last few years been able to send forward very conclusive evidence that the West can and has made good butter and cheese, and may still continue to do the same?

Now, if this be true, it does not become us to pass upon any section

of our country too hastily, especially so where we can obtain good water and the grasses.

The question is frequently propounded as to the first manufacture of butter and cheese—a question not very authentically answered at the present time. Nevertheless, in turning our mind's eye to the bible for a moment, we find in Deuteronomy mention made of butter of kine (meaning cow, undoubtedly); we also find that Samuel makes mention of butter and cheese of kine for David and the people to eat. Now, if the bibical history be correct, butter and cheese was made from milk of kine over 3,000 years ago, or about 1,000 years before that made by the Sytheans, the account of which is given us by the Greek historian, Herodotus, who lived and wrote about 450 years before Christ. The ancient translation of the Hebrew writers seem, however, to have thought that they found butter mentioned in scripture, but those best acquainted with the bible unanimously agree that the word (*Chamera*) means milk, or cream, or sour milk, and, at any rate, does not mean butter. Now, if this be correct, that butter and cheese was not known in early scriptural times, then the Sytheans will undoubtedly receive the credit of having made the first butter and cheese from milk, which, according to history, was made by them over 2,000 years ago.

In passing from ancient to modern times, you will please allow us to give you a few statistics pertaining to what is being done by the dairymen in our country. The estimated number of cows in the United States in 1876 was 11,085,400. The average price of same per head, twenty-eight dollars and eighty-nine cents; aggregating, in round numbers, to $320,256,206.

The amount of butter made in 1875 was 637,796,449 pounds, which being estimated at twenty cents per pound amounts to $127,559,489.80.

The number of pounds of cheese manufactured in 1875 being 266,698,638, which at ten cents per pound would amount to $26,669,863.80.

The consumption of butter in the United States is estimated at about fourteen pounds and that of cheese at nearly four pounds per head per annum in a population of about 45,000,000.

Of the foregoing products Illinois is credited with about one-fourteenth, she being the fourth State in the Union as per United States census of 1870, in the amount of dairy products produced.

The city of Chicago received in 1876, 35,384,184 pounds of butter and 23,280,000 pounds of cheese. Estimating the butter at twenty cents and the cheese at ten cents per pound, would make the trade of Chicago in this staple, amount to the snug little sum of $9,637,636.80.

The exportation from the United States for 1875 was 10,405,434

pounds of butter and 93,475,659 pounds of cheese. The exportation of cheese from Holland for same time was 60,000,000 pounds.

Denmark may be counted a strong competitor of ours; for the English market in 1873 she exported to England 42,526,484 pounds of butter, which is reported as having been sold in that market at fifty cents per pound, while for the same year the United States only exported 4,000,000 pounds, which was sold in that market at twenty-five to thirty-five cents, most of it bringing the former price. Sweeden also exported a large amount of butter which brought in the English market about thirty-five cents per pound.

Now, in reflecting upon what has been said in the foregoing statements, we are forced to the conclusion that either we do not make as good butter as our foreign neighbors or else our best butter does not reach the export trade. Let this be as it may, we are fully satisfied it should receive our careful attention as dairymen of Illinois.

No doubt a home market is the best when sufficiently active to take and consume the entire production of the country. At the present time ours is not such a market. Therefore, it becomes us, as producers, to look carefully to the export trade for the disposal of our surplus.

The dairy business is, annually, largely on the increase in this country. Butter and cheese is being made, and that too of good quality, in sections of our country where it had been supposed, in years bygone, to be impracticable to do anything of the kind. Some weeks ago we clipped from the *Prairie Farmer* (a paper published in Chicago, of much interest to the dairyman and farmer, if carefully read,) the following, which bears directly upon this point: "A colony of Swiss have settled on the Cumberland mountains, in Tennessee, who have dairies and cheese factories in successful operation; their products commanding ready sale and fancy prices."

Now, in conclusion, you will please allow me to say that we fully believe that every dairyman or farmer should consider it a duty that he owes to his sons, and daughters also, to educate them to understand the principles of labor as connected with human development and genuine happiness; at the same time giving them that book education which will fit them to make the best application of such labor, and also to prepare them to fill high and honorable positions in the social relations of life. We are fully aware that in times bygone when the farmer boy was taught to plant his tubers in a certain phase of the moon and his cereals in another, that book education was considered by some, perhaps many, as a dangerous thing for a farmer. Thank fortune, those days are rapidly passing, or have already, meas-

ureably, passed away. Schools have already been established in various sections of our country for the education of the young agriculturist or farmer and we trust they may be the means of doing much good.

Dr. J. WOODWORTH, of Marengo, responded as follows, in substance : Elgin people deserve great credit for their zeal and energy in bringing the dairy interests of the State so prominently before the world at large. He had not long been a professional dairyman. Left a professional life to engage in agriculture. Came to Elgin to learn, not to teach. For many years the dairy product had been brought to our market, where good, bad and indifferent, all brought the same price. Was glad to know that now all was changed, and each package sold upon its merits or not at all ; and no one thing has had so much to do in bringing about this state of things as these conventions. Now, the prime brings good prices, the poor, poor prices, just as it ought to ; believed it the duty of every dairyman to produce the very best he could, and thus keep the standard of our product up, so that when dealers wanted to purchase cheap products they must go to some other state. Illinois would not furnish them much longer. It is not profitable to produce a poor article, neither is it a satisfaction. Western products are now quoted as high, or even higher in the East than Eastern products, which is certainly an encouraging outlook; and if we permit that none but first-class goods shall go upon the market bearing an Illinois brand, we will soon lead the world in dairy products. We heartily coincide with the sentiment of the address of our worthy president, and shall join in the business of this convention feeling that our acts are important, and that we are not among strangers, and when we return to our several homes feel that our time has been profitably spent.

PROF. F. H. HALL, of the Sugar Grove Industrial School, now read the following paper. Subject, "The Successful Agriculturist and Dairyman."

F. H. HALL'S ADDRESS.

THE SUCCESSFUL DAIRYMAN.

"'Tis not in mortals to command success;
But we'll do more—we'll deserve it."

And deserving it, it will be ours. As sure as night follows the day, and the day follows night, so sure will success follow him who is worthy of it. There are apparent exceptions to this rule—there may be real exceptions, but they are as rare as four-leafed clover, or as thunder in January.

One of God's fundamental laws that applies to dairymen as well as to schoolmasters, is, that men have, in this life, just what success they are able and willing to pay for. The product obtained by multiplying labor by skill, determines the reward. It is true that the ability to labor or to exercise skill may depend, in part at least, upon the *pedigree* of the man.

There are thoroughbred men, as well as thoroughbred cattle. There are also grades and crosses among the human species.

There are men whose breeding especially fits them for the dirty work of the farm. They like the odor of horses, of cattle, and even of the barnyard. They seem never so happy as when ankle deep in rich hog-manure, they heap up the load that is soon to be transmuted into golden corn.

Then there are human beings whose breeding totally unfits them for the work of the farm. If they attempt to work in the garden even, among the verbenas and asters, they will put on their rubber gauntlets, and, holding their hands well away from their sides, will direct the hired man while he performs the labor. So particular are these cleanly-bred individuals that a fly in the cream unfits it for use and a hair in the butter is intolerable.

A cross between these two varieties of "humans" might produce a good dairyman.

But the science of stirpiculture is not yet so well defined that it will be safe to depend on this cross for our future supply. Neither is there a thoroughbred race sufficiently numerous to answer the purpose. So, for the present generation, at least, a judge, a doctor of medicine, or a good clean-handed farmer, with a wife that dares throw dirty milk into the swill-tub, or even a schoolmaster, may hope to take high rank as a dairyman.

But pedigree alone will not enable a short-horn to win in the show-ring. An abundance of wholesome food, judiciously given, is also necessary.

Hambeltonian blood alone, will not enable a horse to distinguish himself upon the course. There is necessary besides this the skillful training of a Higby or a Doble.

So too the well-bred dairyman needs feed and training. The former he may get from books, periodicals, at conventions, and by visiting other dairymen. The latter must be acquired by actual experience, aided by keen perceptives and a sound judgment.

I find myself to-day in better condition for the race, as a dairyman, than I was one year ago; because, since then I have been fed by a Wanzer, a Boies, a Woodworth, a Tefft, a Dake, a Stone, a Morrow, a Wilcox, a Buell, a Gurler, and a score of others. And they are all liberal feeders. I have found much food too, in the columns of the *Prairie Farmer*, the *Western Rural*, the *Live Stock Journal*, the *Country Gentleman*, and the *American Agriculturist*, as well as upon the pages of Arnold's American Dairying. Williard's Butter Book, and Warring's Elements of Agriculture. Some of this food I have been able to appropriate, to assimilate, and it has become a part of myself, so that to-day, having had in the months passed frequent exercise at the churn and at the butter worker, in the language of the horseman, I believe I can trot squarer and make better time than I could one year ago.

If the sound of my voice, by some telephonic power, could be made to reach those who never attend dairymen's meetings, I should dwell upon the benefits I received from the Elgin and Chicago conventions last winter. But this is unnecessary here. Let me then proceed, at once, to consider some of the essentials to financial success, a few of the details that need looking after, in order to ward off financial failure.

Failure costs *almost* as much effort as success.

Failure is *almost* as tall as success.

Failure is almost as *strong* as success.

The words of Macawber, somewhat changed, will answer our purpose: Income, $100 per month; expenses, $99.50; success. Income $100 per month; expenses, $100.50; failure. A single dollar added to expenses, income remaining the same, converts success into failure. A single dollar added to income, expenses remaining the same, converts failure into success. This then is the dollar that needs looking after, the dollar that persists in getting into the wrong scale; or the dollar that belongs in the income scale and *doesn't* get there; or the dollar that doesn't belong in the expense scale and *does* get there.

Come with me to the cow-barn. Is the urine, liquid gold, escaping through the floor and forming stagnant pools beneath the barn? There goes the dollar that might tip the beam in favor of success. Save the *liquid* and you may be able to *liquidate* your debts.

Or does the urine stand in pools upon the floor and accumulate, together with the solid manure upon the sides and udders of your cows? Be sure it will weigh heavily upon the failure side when it finds its way into the milk pail. The man who manures his milk instead of his land, does not deserve to succeed.

Do your cows drink ice-water in the winter, and with rainbow backs stand shivering in the cruel blasts of a fierce "northeaster?" They will burn the dollar that might convert failure into success, to keep themsevles warm.

Do you feed without racks, in a muddy barnyard? Then the dollar that might make you successful is daily tramped into the mud.

Do you feed your cows nothing but hay and straw in winter and keep them on a short pasture half the summer? Then you neglect to put a dollar into the expense scale that might put two or five into the income scale.

Do you feed your corn fodder in warm weather and bran while your cattle are upon the aftermath of a rich clover field? You will very likely conclude that it does not pay to cut up corn or to buy bran to feed cows.

Do you keep a huge bull-dog or a poorly trained shepherd that "brings the cows" at your bidding? And do the animals frequently come to the barn with high heads and bleeding heels? "Shoot the dog." For these cows are locomotive animals that get up steam by a combustion of butter material, and every unnecessary step, every motion beyond what is essential for the health of the animal, cuts off a portion from the butter yield, and from your income.

Does a frequent, vigorous, and improper use of the milking stool, or of the toe of your cowhide, or of the manure fork, or even of your fist, keep the cows in constant fear of you? By every excitement that causes the blood to flow faster in the veins of the cow, by every infliction of pain, and even by every cause of fear, the draft of the furnace is opened wider, and brighter glow the fires that are fed with butter.

Do you set your milk in small shallow pans? Then if you succeed financially you are doing so in spite of a large amount of useless labor.

Does the temperature of the milk in your dairy room, in the warm days of summer, often get as high as 70°? Then you are losing enough every year to supply yourself with better dairy appliances.

Do you warm your cream by guess in winter, and cool it by guess in summer? Do you guess at the amount of butter taken from the churn and guess at the amount of salt required? Then I guess that the quality of

your butter product will not be sufficiently uniform to command the highest market price.

Do you make good butter and sell it at a grocery where the price paid depends quite as much upon the amount of groceries you are in the habit of purchasing, as upon the quality of your butter?

Do you trade with a man that handles butter only "to accommodate the farmer," and to draw trade, and who is quite well satisfied if the profit on *your butter* cancels the loss on your neighbor's grease—only provided he gets a good grocery trade from both of you? Then you do not exercise that skill in disposing of your product that is commensurate with the skill employed in your dairy room, or with that which the groceryman exercises.

If you habitually make poor butter, I can honestly recommend to you the corner grocery, as the very best place to dispose of it. But if your butter is first-class, and uniformly so, try the Elgin Board of Trade; or at least, find a man to deal with who has no goods that he expects to sell to you or to your neighbor, and he will probably be willing to buy the butter on its merits.

The grocerymen are often loud in their complaints concerning the quality of the butter brought to them by the average farmer. I have been repeatedly told by them that not one-fifth of the butter marketed is first-class.

But the majority of farmers will not stop making poor butter; this condition of things will continue in spite of Agricultural Schools and Dairymen's Conventions, in spite of the earnest and truthful statements so often appearing in the dairy column of our agricultural papers, in spite of all that may be said, and written, and invented by the Willards, the Arnolds, the Morrows, the Warrings, the Hardins, and the Cooleys, this condition of things will continue until the grocerymen shall be induced or forced to stop offering a premium for salvey, frowey, streaked, buttermilky butter.

If this Convention desires to promote the dairy interests of Illinois, if it desires to improve the quality of the butter manufactured in the numerous small dairies of this State, if it desires not simply the success of its individual members, but the enlightenment and consequent success of its brother farmers, who are at home, and whose forms never darken the door of an assembly like this, if it is ambitious that the reputation of western butter should be improved, let it make an earnest, a vigorous, and a direct attack upon the grocerymen and their method of dealing with butter makers.

I am confident that the average quality of Illinois butter might be

improved twenty-five per cent. in a single year by such a concert of action among grocerymen as would render it impossible for a man to dispose of fifth-rate butter at a second rate price, and insure to the man who would make *first-rate* butter a *first-rate* price.

Butter that could be sold on the Elgin Board of Trade to-day for thirty-three cents, would not, in the Aurora market, bring over twenty-seven cents; while some of the butter that will be sold in Aurora to-day for twenty-five cents, could not be sold at all on the Board of Trade, or, if sold, would not bring more than seventeen or eighteen cents.

Now the man that makes the thirty-three cent butter loses six cents per pound on his butter, and the money is given as a premium to the man who makes eighteen cent butter. Then you will hear the grocerymen talk loud, in a general way, (they seldom mention names,) because the people do not learn to make good butter.

If you really make a first-class article and your grocery trade is large, perhaps you may succeed in getting one cent per pound above the grocery market price, but the offer will always be made in a whisper, and will be accompanied by the injunction to say nothing about it, as it would offend Mr. B., your neighbor, who did not receive the extra cent per pound for his butter.

I repeat and emphasize the statement, that grocerymen, as a rule, do not buy butter on its merits.

A lady of my acquaintance told me that she took butter into the Aurora market which she knew to be poor butter—very poor. It was made from bitter cream, and was similar in color to red chalk. Yet she received for it the highest grocery market price, and the buyer even told her that it was first-class butter.

An acquaintance of mine who had been buying butter, and upon whose hands quite an amount of poor butter had accumulated, disguised himself as a farmer, hired a pair of mules, and took part of it into the Aurora market, where, armed with a kerosene oil can and a sugar bucket, he offered it for sale. The ruse was a success. He received for it several cents per pound more than the butter would have brought had it been sold upon its merits. He bought a gallon of kerosene and ten dollars worth of sugar. Fearing to repeat the experiment upon the same ground, he hired a Swede to market the remainder of the accumulated stock, who did it with nearly equal success. If you make poor butter, then, take your kerosene oil can along, and ask the price of butter at the corner grocery.

But a change for the better can never be effected in this matter except

So too the well-bred dairyman needs feed and training. The former he may get from books, periodicals, at conventions, and by visiting other dairymen. The latter must be acquired by actual experience, aided by keen perceptives and a sound judgment.

I find myself to-day in better condition for the race, as a dairyman, than I was one year ago; because, since then I have been fed by a Wanzer, a Boies, a Woodworth, a Tefft, a Dake, a Stone, a Morrow, a Wilcox, a Buell, a Gurler, and a score of others. And they are all liberal feeders. I have found much food too, in the columns of the *Prairie Farmer*, the *Western Rural*, the *Live Stock Journal*, the *Country Gentleman*, and the *American Agriculturist*, as well as upon the pages of Arnold's American Dairying. Williard's Butter Book, and Warring's Elements of Agriculture. Some of this food I have been able to appropriate, to assimilate, and it has become a part of myself, so that to-day, having had in the months passed frequent exercise at the churn and at the butter worker, in the language of the horseman, I believe I can trot squarer and make better time than I could one year ago.

If the sound of my voice, by some telephonic power, could be made to reach those who never attend dairymen's meetings, I should dwell upon the benefits I received from the Elgin and Chicago conventions last winter. But this is unnecessary here. Let me then proceed, at once, to consider some of the essentials to financial success, a few of the details that need looking after, in order to ward off financial failure.

Failure costs *almost* as much effort as success.

Failure is *almost* as tall as success.

Failure is almost as *strong* as success.

The words of Macawber, somewhat changed, will answer our purpose: Income, $100 per month; expenses, $99.50; success. Income $100. per month; expenses, $100.50; failure. A single dollar added to expenses, income remaining the same, converts success into failure. A single dollar added to income, expenses remaining the same, converts failure into success. This then is the dollar that needs looking after, the dollar that persists in getting into the wrong scale; or the dollar that belongs in the income scale and *doesn't* get there; or the dollar that doesn't belong in the expense scale and *does* get there.

Come with me to the cow-barn. Is the urine, liquid gold, escaping through the floor and forming stagnant pools beneath the barn? There goes the dollar that might tip the beam in favor of success. Save the *liquid* and you may be able to *liquidate* your debts.

Or does the urine stand in pools upon the floor and accumulate, together with the solid manure upon the sides and udders of your cows? Be sure it will weigh heavily upon the failure side when it finds its way into the milk pail. The man who manures his milk instead of his land, does not deserve to succeed.

Do your cows drink ice-water in the winter, and with rainbow backs stand shivering in the cruel blasts of a fierce "northeaster?" They will burn the dollar that might convert failure into success, to keep themsevles warm.

Do you feed without racks, in a muddy barnyard? Then the dollar that might make you successful is daily tramped into the mud.

Do you feed your cows nothing but hay and straw in winter and keep them on a short pasture half the summer? Then you neglect to put a dollar into the expense scale that might put two or five into the income scale.

Do you feed your corn fodder in warm weather and bran while your cattle are upon the aftermath of a rich clover field? You will very likely conclude that it does not pay to cut up corn or to buy bran to feed cows.

Do you keep a huge bull-dog or a poorly trained shepherd that "brings the cows" at your bidding? And do the animals frequently come to the barn with high heads and bleeding heels? "Shoot the dog." For these cows are locomotive animals that get up steam by a combustion of butter material, and every unnecessary step, every motion beyond what is essential for the health of the animal, cuts off a portion from the butter yield, and from your income.

Does a frequent, vigorous, and improper use of the milking stool, or of the toe of your cowhide, or of the manure fork, or even of your fist, keep the cows in constant fear of you? By every excitement that causes the blood to flow faster in the veins of the cow, by every infliction of pain, and even by every cause of fear, the draft of the furnace is opened wider, and brighter glow the fires that are fed with butter.

Do you set your milk in small shallow pans? Then if you succeed financially you are doing so in spite of a large amount of useless labor.

Does the temperature of the milk in your dairy room, in the warm days of summer, often get as high as 70°? Then you are losing enough every year to supply yourself with better dairy appliances.

Do you warm your cream by guess in winter, and cool it by guess in summer? Do you guess at the amount of butter taken from the churn and guess at the amount of salt required? Then I guess that the quality of

your butter product will not be sufficiently uniform to command the highest market price.

Do you make good butter and sell it at a grocery where the price paid depends quite as much upon the amount of groceries you are in the habit of purchasing, as upon the quality of your butter?

Do you trade with a man that handles butter only "to accommodate the farmer," and to draw trade, and who is quite well satisfied if the profit on *your butter* cancels the loss on your neighbor's grease—only provided he gets a good grocery trade from both of you? Then you do not exercise that skill in disposing of your product that is commensurate with the skill employed in your dairy room, or with that which the groceryman exercises.

If you habitually make poor butter, I can honestly recommend to you the corner grocery, as the very best place to dispose of it. But if your butter is first-class, and uniformly so, try the Elgin Board of Trade; or at least, find a man to deal with who has no goods that he expects to sell to you or to your neighbor, and he will probably be willing to buy the butter on its merits.

The grocerymen are often loud in their complaints concerning the quality of the butter brought to them by the average farmer. I have been repeatedly told by them that not one-fifth of the butter marketed is first-class.

But the majority of farmers will not stop making poor butter; this condition of things will continue in spite of Agricultural Schools and Dairymen's Conventions, in spite of the earnest and truthful statements so often appearing in the dairy column of our agricultural papers, in spite of all that may be said, and written, and invented by the Willards, the Arnolds, the Morrows, the Warrings, the Hardins, and the Cooleys, this condition of things will continue until the grocerymen shall be induced or forced to stop offering a premium for salvey, frowey, streaked, buttermilky butter.

If this Convention desires to promote the dairy interests of Illinois, if it desires to improve the quality of the butter manufactured in the numerous small dairies of this State, if it desires not simply the success of its individual members, but the enlightenment and consequent success of its brother farmers, who are at home, and whose forms never darken the door of an assembly like this, if it is ambitious that the reputation of western butter should be improved, let it make an earnest, a vigorous, and a direct attack upon the grocerymen and their method of dealing with butter makers.

I am confident that the average quality of Illinois butter might be

improved twenty-five per cent. in a single year by such a concert of action among grocerymen as would render it impossible for a man to dispose of fifth-rate butter at a second rate price, and insure to the man who would make *first-rate* butter a *first-rate* price.

Butter that could be sold on the Elgin Board of Trade to-day for thirty-three cents, would not, in the Aurora market, bring over twenty-seven cents; while some of the butter that will be sold in Aurora to-day for twenty-five cents, could not be sold at all on the Board of Trade, or, if sold, would not bring more than seventeen or eighteen cents.

Now the man that makes the thirty-three cent butter loses six cents per pound on his butter, and the money is given as a premium to the man who makes eighteen cent butter. Then you will hear the grocerymen talk loud, in a general way, (they seldom mention names,) because the people do not learn to make good butter.

If you really make a first-class article and your grocery trade is large, perhaps you may succeed in getting one cent per pound above the grocery market price, but the offer will always be made in a whisper, and will be accompanied by the injunction to say nothing about it, as it would offend Mr. B., your neighbor, who did not receive the extra cent per pound for his butter.

I repeat and emphasize the statement, that grocerymen, as a rule, do not buy butter on its merits.

A lady of my acquaintance told me that she took butter into the Aurora market which she knew to be poor butter—very poor. It was made from bitter cream, and was similar in color to red chalk. Yet she received for it the highest grocery market price, and the buyer even told her that it was first-class butter.

An acquaintance of mine who had been buying butter, and upon whose hands quite an amount of poor butter had accumulated, disguised himself as a farmer, hired a pair of mules, and took part of it into the Aurora market, where, armed with a kerosene oil can and a sugar bucket, he offered it for sale. The ruse was a success. He received for it several cents per pound more than the butter would have brought had it been sold upon its merits. He bought a gallon of kerosene and ten dollars worth of sugar. Fearing to repeat the experiment upon the same ground, he hired a Swede to market the remainder of the accumulated stock, who did it with nearly equal success. If you make poor butter, then, take your kerosene oil can along, and ask the price of butter at the corner grocery.

But a change for the better can never be effected in this matter except

by a concert of action on the part of grocerymen. No one dealer, however fully he may realize the importance of such action, can alone adopt the plan of buying butter on its merits, since it would inevitably result in diminishing his trade by more than one-half. But by unison of action, and the adoption of a system of inspection sanctioned by law, by which the grade of every tub of butter should be determined before it is offered for sale, and the employment of inspectors of known ability and integrity an untold amount of good might be done, and thousands of dollars added to the annual income of the dairymen of Illinois. The trade would then become educational, and hundreds of people would be taught what they do not now know, viz.: that they are not making, neither do they know how to make a good quality of butter.

Conventions like this would multiply, old cellars would be cleaned out, the cows would be given a good bed of straw, the churn would get an extra scalding, milk containing manure would be thrown to the pigs, the scales would be used in salting butter, proper dairy rooms would be built, and the amount of soap-grease put upon the market in butter tubs, would be reduced to a minimum. Until some system is adopted by the country and small city grocerymen, which will insure the recognition of quality in butter, the successful dairyman must seek some other market. Many good butter makers have already learned this, and others will not be slow in following their example.

One of the first requisites to a high degree and certainty of success, is a complete knowledge of one's own business affairs. It is not sufficient that we should know that our income during a certain year has been one thousand dollars more than our expenses. But that it may continue to be so, or improve, it is necessary that we should know the exact source of each dollar of income. The almost wonderful success of many of the dairy farms in and around Elgin, is not so much because they have had a good market for their milk. Almost any farmer in Illinois may realize nearly or quite as much per gallon for milk as those can who are within three miles of the Elgin Milk Condensing Company. The success of these dwellers in Elgin is not so much, I say, because they can get ten cents a gallon for their milk in summer, and thirteen cents in winter, as it is because circumstances have forced them to see the relation between feed and milk. They have thoroughly learned the fact of which many of the farmers in Illinois are at present ignorant, that the more a cow can be made to eat and digest, the more profitable does the animal become. They have learned what nineteen-twentieths of the farmers of Illinois do not believe, that to leave corn standing in the field until it is time to husk and crib it, is a wasteful

practice. They have learned that the exposure of cows to storms, or even cold winds, affects the cash income unfavorably. They are fast learning that it is not profitable to turn all their calves to the butcher and depend for their supply of dairy stock upon second-class cows brought from other localities.

These things they have learned and are learning because the market for milk has induced them to turn all the resources of the farm toward the production of that one article, for which they receive their pay in cash. Thus, having but one article to market, the keeping of accurate accounts becomes a very simple matter, and they see, almost without effort, what method of feeding and managing dairy cows and farm crops, fills the purse the fastest. Not so with the man engaged in "mixed farming." It requires no little skill as an accountant on the part of such a farmer, to determine the *true source* of the different parts of his income. His cows, his hogs, his sheep, his poultry, his horses, his steers, are all fed from the same crib. (In too many cases, however, the poor cows get nothing from the crib.) The hogs are fed sour milk, which must be placed to the credit of the cows, and they eat the corn that escapes the digestive apparatus of the steers. Most of the income from the poultry is consumed upon the table, while the labor of both men and horses, all the minor expenses of the farm and of the household, are chargeable in different proportions to the various sources of income.

Thus the task of keeping debt and credit with each department of the farm, becomes one of considerable magnitude. Yet I am positive that the highest degree of success cannot be attained without doing this, and that for the time so consumed, if the work be well done, the farmer will, "in the long run," be richly compensated. As soon as one commences such work as this, he is led to observe more carefully; every bushel of corn, every ton of hay, every pound of oil meal, will, after its consumption, be brought to judgment, and will be required to give an account of its work. Comparisons will be made, correct values will be placed upon the various farm crops, and "guess-work" will, in many cases at least, give place to positive knowledge.

A very intelligent Irishman, whom I have had in my employ for some time, and whose judgment upon most matters is of real value to me, often insists that I keep my "growing pigs" too fat; that I "throw away corn" by so doing, etc. Very likely half the farmers in Kane County would agree with him; and yet, I cannot find one who holds to such opinions that ever *weighed or measured* to find the actual cost of a three hundred pound hog. They often make assertions with great positiveness, but they

never support them with *figures*. Now, if a man has conveniences for weighing his animals, (and every farmer ought to have,) it will not take much time to know, *by figures*, whether or not the proper way to raise a hog is to starve him during the first half of his existence, in order that he may have a good appetite during the rest of his life; it will not take much time to know whether it pays better to market fat hogs, nine months old, and weighing two hundred and fifty pounds, or to keep them until they are eighteen months old and weigh five hundred pounds.

So important is this matter of keeping accounts, so necessary to a high degree of success to the farmer, that I will risk the tiring of your patience while I briefly outline a system, or rather part of a system, which it seems to me might and should be adopted by every intelligent farmer, unless he already has something better. On the first day of January, let him determine the several sources from which he expects income during the year. The more important of these should be selected, and a page of a common ledger devoted to each; write the name of the department at the top of the page. Perhaps, for the first year, the ledger might appear as follows: First page, "Milch Cows;" second page, "Fatting Steers;" third page, "Other Neat Stock;" fourth page, "Hogs;" fifth page, "Sheep;" sixth page, "Poultry."

Now he should carefully estimate the value of the stock in each department on January 1st, and enter its value upon the left side of the ledger page devoted to that particular source of income. Then, as often as he receives income from any one of these departments, during the year, let him enter it upon the right-hand side of the proper ledger page. And, as often as any department is the cause of an expenditure, he should enter the amount of the expense upon the left side. At the end of every month he should estimate carefully the food consumed by the animals of each department during the month, and place its value with the expenditures, on the left side. At the end of the year the valuation of stock in each department should be again taken and placed upon the right-hand side of the ledger page. Now the page or pages devoted to milch cows, will show something like the following results:

Upon the left-hand side will be the valuation at the beginning of the year, say....	$1,600
Also, items of expense, including animals bought, amount paid for medicine, salt, butter tubs, etc., etc.,....	300
Food, as estimated at the end of each month....	1,420
Total....	$3,320
Upon the right-hand side will be the amounts received for butter sold....	$1,850
Amount received for animals sold....	100
Value of sour milk fed to pigs, as estimated monthly....	400
Value of milk and butter consumed upon the table....	75
Valuation of milch cows at the end of year....	1,800
Total....	$4,225

The difference of nine hundred and five dollars between the two sides, represents the income from that source.

Let the same be done with each department and at the close of the year the farmer will be able to tell, with some degree of accuracy, what line of farming pays him best and can govern himself accordingly.

I spoke of this as part of a system; make it complete and you have the double-entry book-keeping of our merchants and bankers. Indeed, in part of the system that I have outlined, you will occasionally get a double entry; as for instance, the value of the sour milk appears to the credit of the cows, and upon the debtor side of the hog account. And every expenditure of cash should appear upon the right side of the cash account, and upon the left side of some other account.

The *young* farmer should be satisfied with nothing short of a complete knowledge of double-entry book-keeping, and its application to farm accounts. Sets of books thus kept for a few years, would become invaluable to him. Upon their pages he would be able to discern scores of index fingers pointing the way to financial success.

But financial success is not all that is desirable or that the farmer may aspire. He who accumulates piles of gold may yet be poor, while he who has only a *competency* is usually much richer than he who is possessed of a *superfluity*. That dairyman or agriculturist whose success is as broad as it is long, whose desires are not *all* in the one direction of gold, gold, shining gold, who has learned to value money chiefly for its legitimate uses, will build up for himself and his family a home that will be a center of culture and refinement. Home adornment, home entertainment and amusement, the proper intellectual development of every member of the family will be provided for, and the sons and the daughters will be made to feel that farm life is not all "drudgery," and that the city does not contain all the attractions for maturing manhood and womanhood.

We must devote less time daily to manual labor, and require less of our sons and daughters. We must "manure our farms with brains," feed with brains, and put brains into the butter, and teach our children to do likewise. Let them know that there is just as broad a field for the play of the intellectual faculties upon the farm, and in the dairy room, as there is in the watch factory, or behind the counter. Make them feel that it is as noble and as honorable to be an intelligent and successful dairyman as to be a merchant or a lawyer. Then will this unfortunate tide that is always settling towards the town and from the country, be in some measure checked.

But I must not dwell longer upon this subject. The conclusion of the whole matter is this,

The successful dairyman is the man who by strict attention to the details of his business, and without excessive manual labor and drudgery, either on his own part or on the part of any member of his family, never swerving a hair's breadth from the right line of integrity, accumulates a competency; and while doing this, does not neglect that development of the mind, that intellectual culture, that heart culture, which alone can fit him and his family for the proper enjoyment of accumulated wealth, and make of them honorable and valuable members of society.

Topic No. 1—"If Dairy farming is the most remunerative, how can we make it more so?" was now taken up and discussed; G. P. Lord, Esq., of Elgin, reading the following paper:

MR. G. P. LORD'S PAPER.

Mr. President:—The topic for discussion is this: "If dairy farming is the most remunerative, how can we make it more so?" Or, in other words, what methods can be adopted by the dairymen of this country to make the dairy business more profitable than it now is.

That the importance of this subject may be fully impressed on our minds, consider for a moment the vast amount of capital invested in this branch of industry.

Mr. Sherman Tracey, in an address before the "Western Reserve Dairy Association," stated that in 1875 there was in this country 10,000,000 of cows used for dairy purposes, which, valued at forty-five dollars per head, represented a capital of $450,000,000.

If it requires three acres of land to furnish food for each cow, then we shall find that there are 30,000,000 of acres of land devoted to this purpose, which at thirty dollars per acre, a low estimate, represents a capital of $900,000,000 invested in land used in carrying on the dairy business. Nor do these two items include all that is invested in dairying, but we must add for teams, wagons, agricultural and dairy implements at least $100,000,000 more, making a grand total of $1,450,000,000 invested by the dairymen of this country in this single branch of industry.

Now let us compare this with the amount of capital invested in banking. We find that the comptroller of the currency reports that on the first of October, 1877, all the national banks of the country had a capital

of $489,467,771. Banks other than national and savings, have a capital of $211,634,586.

By this it will be seen that the national banks of this country have a capital invested in their business exceeding only by about $30,000,000 the capital invested by dairymen in the single item of cows, and that the capital invested in banks in this country, other than savings, is but seventy-five per cent. of the amount invested by dairymen in land.

If now we add to the capital invested in banking the amount of individual deposits in all the banks of this country other than deposits in savings banks, we find as follows:

Individual Deposits in National Banks, October 1st, 1877	$ 616 403,987
Deposits in other Banks	483,458,242
Total deposits, (other than Savings' deposits,)	1,099,862,229

Add to this the

Bank Capital, (as before stated,)	691,101,357

And we have a total of

Bank capital and deposits, of	1,790,964,586

It will be noticed that this amount includes all the capital invested in banking and all the money of the commercial, manufacturing, and business men of our country.

If we adopt Mr. Tracey's statement of the number and value of cows, and our estimate of the quantity and value of land and other property used by the dairy farmers in the prosecution of their business, it will be seen that the capital invested in this business nearly if not quite equals all the banking capital and the money wealth of all the commercial, manufacturing and business men of this country.

How to obtain the best results for such an amount of capital so invested, is worthy of the most careful consideration.

In discussing the topic, how to make dairy farming more profitable than it now is, I shall present only one view of it, viz.: the necessity of making our dairy products of such kinds and qualities that they shall rank equal to that of other countries, in the best markets of the world, and thus avoid the fearful fluctuations in value so common to our own localities.

The Hon. X. A. Willard, in an address before the "Vermont Dairymen's Association," stated that in looking over the English market reports for the past ten years, it would appear that there has been but little fluctuations in price; that there never was a time when the market was glutted with cheese of clear, sweet, nutty flavor; that such cheese, of good keeping

qualities, will always sell at good fair prices; that English Cheddar cheese, year after year, had been worth not far from ninety shillings sterling per cwt., while American cheese had varied from thirty to seventy shillings per cwt.; that on the eleventh of December, 1875, the market for cheese was as follows: English Cheddar, first quality, ninety shillings per cwt., equal to twenty-two and one-half cents per pound, currency; second quality, seventy-four shillings per cwt., equal to eighteen cents currency; English Cheddar, first quality, eighty-six shillings per cwt., equal to twenty-one cents currency; second quality, seventy-six shillings per cwt., equal to eighteen and one-half cents currency; third quality, seventy shillings per cwt., equal to seventeen cents currency; Scotch Cheddar, first quality, seventy-six shillings per cwt., equal to eighteen and one-half cents currency; second quality, fifty-four shillings per cwt., equal to fifteen and one-half cents currency; Dutch Gonda, first quality, sixty shillings per cwt., equal to fourteen and three-fourths cents currency; second quality, fifty-six shillings per cwt., equal to thirteen and three-fourths cents currency; Dutch Edam, first quality, sixty-eight shillings per cwt., equal to sixteen and one-fourth cents currency; second quality, fifty-six shillings per cwt., equal to thirteen and three-fourths cents currency; American, first quality, fifty-eight shillings per cwt., equal to fourteen cents currency; second quality, fifty shillings per cwt., equal to twelve cents currency; third quality, forty shillings per cwt., equal to nine and three fourths cents currency. And Mr. Willard remarks: "Such a difference in values proves either that our goods do not enter into competition, or that the quality is so inferior that our competition is practically no detriment to the foreign producers."

Mr. Livesey, of Derbyshire, England, who has made a specialty in keeping the run of the matter, says in a recent letter to Mr. Willard, that there has been scarcely any variation in the price of first-class cheese for many years in the markets of England. The variation has been confined exclusively to the American and inferior grades.

By reference to these figures it will be seen that first quality of American cheese in the London market in December, 1875, was eight and one-half cents per pound, currency, below the first quality of English Cheddar; seven cents per pound below first quality English Chistim; three cents per pound below the price of the third quality of English Chistim; one and one-half cents per pound below the lowest grade quoted of Scotch Cheddar, and only about on a par with the lowest grades of Dutch cheese in that market, while the third quality of American cheese was only worth about fifty-seven cents per cwt., or a little over one-half that of third quality

of English Chistim. It seems to me that any candid man will say, in view of this state of things, that a reform in this matter is absolutely necessary.

And here it may be well to refer to the variation in the price of cheese in our own market during the present year. In the early part of the year, say from January 7th to March, cheese was worth in this market about thirteen cents per pound; on the 10th of July it was sold at seven cents; on the 30th of October cheese sold at twelve to twelve and one-fourth cents per pound.

This shows a reduction from early spring to July 10th, of almost forty-six per cent., and an advance from July 10th to October 30th, of about seventy-five per cent. What a strange contrast is this with the stability of the English market for their best quality of cheese.

I think there are but few men who would be willing to engage or long continue in a business subject to such fearful fluctuation in prices.

If now, we inquire into the reason for the difference in the price of the best English and American cheese in the London market, we shall find that it is not in the component parts of the cheese, for an analysis made of the best Cheddar cheese, six months old, showed thirty-four per cent. of water, a little more than thirty-three per cent of butter, and twenty-eight per cent. of casin, while the best American had twenty-seven per cent. of water, thirty-five and one-half per cent. of butter, and twenty-six per cent of casin. It will be seen that the percentages stated do not amount to the whole number of parts, but Mr. Willard, from whom I have the statement, says that American cheese has two and one-half per cent. more butter and seven per cent. of water less than the English Cheddar, thus indicating that the seven per cent. of mixture in the English Cheddar in excess of that in the American, is made to take the place of butter, producing a more palatable and desirable cheese, and one that will sell for more money in the English market than the American.

Mr. Willard further states that when he was in London, in 1866, that Prof. Voelcku showed him a cheese from Norway, which appeared to be exceedingly rich in butter; the casin was completely broken down, and was so mellow and plastic as to be easily spread with a knife, like butter. It was sweet and clear-flavored, and he was greatly surprised when informed that on analysis this cheese contained scarcely any butter in its composition.

From what has been said it will be seen that the difficulty does not lie in the component parts of the cheese, for Mr. Willard says if the Cheddar dairymen of Somertshire, by skimming the night's milk and adding to it the morning's milk, can make a cheese that will sell at from twenty to thirty

shillings sterling per cwt. more than that from our best whole-milk factories, and if Holland can make a skimmed cheese that competes in price with our best whole-milk cheese on English market, then there is room for us to improve our goods.

Mr. Willard further says that it is almost impossible to convince cheese dealers and dairymen that a rich, mellow, palatable cheese, having the taste and appearance of much fat in its composition, can be made from milk not particularly rich in butter, though this has been proved over and over again.

Mr. Willard says the defect complained of in American Factory Cheese (when well made,) is its tendency to dryness; that there must be thirty to thirty-three per cent. of moisture in all cheese of desirable quality and flavor, or else an excess of fat to supply this deficiency of moisture. As moisture in the form of water is cheaper than butter, it is important to ascertain, if possible, how this moisture may be retained in the cheese. This is to be done in the process of curing.

Mr. Willard remarks, "One of the prominent faults in cheese making is a too rapid evaporation of moisture in the early stages of curing. The water does not have a chance to assimilate with the other parts before passing off, hence dryness and apparent lack of butter."

Uniformity of temperature and good ventilation in the curing room are necessary in order to achieve the best results in cheese making.

Mr. Harding, of Somertshire, told Mr. Willard that the success of Cheddar cheese was due quite as much to the curing as to the making, and that in their curing rooms great care has been taken to secure good ventilation and a uniform temperature of 70° to 75°.

In addition to this Mr. Willard insists that all factories should be provided with a refrigerator room, where the temperature should be 60° or below, and we think the temperature should be below 50°, and that when the cheese that is made in hot weather has sufficiently cured, it should be removed to the refrigerator room and then kept at so low a temperature that fermentation and all change should be prevented. It would then retain the flavor it had when it left the curing room, and as soon as the weather would permit might be sent to market without injury. This method adopted, ill-flavored cheese would disappear, the consumption of cheese would be increased, and all classes benefited.

Who, and how many of our manufacturers will adopt such methods in the manufacture of cheese as will secure to our dairy farms results equal to those realized by our English friends.

S. K. Williams, E. H. Seward, and Israel Boies, also spoke to this question, all giving their testimony in favor of dairy farming, as it certainly furnished the necessary elements to keep up a farm. Manure was the great stimulant to any branch of agriculture, but none produced it to such an extent as the dairy. All of these gentlemen persisted that if you would take care of the cows they would take care of you.

J. R. Mc Lean also gave his evidence in favor of dairy farming. The grain farmer only received his return once a year, while the dairyman received his every thirty days; could pay debts or spend his money, as he liked. Urged all dairymen to hold fast to the good cows, but get rid of the scalawags. Do not sell a good cow because she goes dry a month or two. Must raise our own cows. This is the way to make our farms pay better The better the cows the better the pay. To pay forty-five or sixty dollars for scalawag cows from Wisconsin or Missouri, was suicidal. Would never pay. Must raise our calves from our best cows, and then steer clear from cow jockeys.

Topic No. 2—"What are the essential requirements of a good dairy farm."

Dr. J. Woodworth, of Marengo, Illinois, said: The first of all was a good dairyman. He must be an honest man, a clean man, and a humane man. No slouch, or cruel man could ever become a successful dairyman, and they were not among the essentials. But good fences were, and good fences made good neighbors — or at least kept them so. It was easier and cheaper to have good fences than to consult lawyers as to liabilities, etc. Every dairyman and his stock should live on and within himself or move out of the neighborhood. Pure water and plenty of it was important. Cows will drink six or eight times a day if water is handy, in fact they will drink nearly every time they pass a tank of pure

water. Believed that stagnant water would produce abortion. Sink-holes are not fit for cows to drink out of. Bad water is the cause of much of the dairymen's trouble; if only he could be convinced of it. Would drain all the ponds as soon as possible. A good wind-mill was far better, than all the ponds or running streams; the water was purer and then you could have your water just where it was most convenient. Cattle were not compelled to search for holes in the ice in cold weather for a drink, and the weaker ones hooked about and bruised by the master ones. If on the prairie it is essential that you plant trees, so that when the mercury stands eighty or ninety, the cows can find shade. Plenty of shade should be furnished every dairy, so that hooking and crowding will not be necessary for all to be accommodated. If not near a factory, a good cool milk-house is absolutely essential, so that milk can be cooled as soon as milked. It is essential that all be clean; any farmer can run a dirty place, but a good dairyman will have nothing but cleanliness about him. It was essential to produce a good product as they will always command a good price Each dairyman should endeavor to build up a trade for himself, and should have his own trade-mark. It was a difficult task to enumerate all the essentials of a good dairy farm, but he considered anything which tended to make the farm richer and better, and to pay better dividends, were among the essentials.

E. H. SEWARD, Marengo. The first thing to consider was the location. It should not be remote from good markets. It should be compact in form, not "all long and no wide." Buildings should be centrally located and on high and dry ground. Americans locate buildings with reference to roads or streams; foreigners do different; they locate as to convenience. Wind-mills were far better than any creek or running stream. Our low lands must not be forced as pastures; cold, wet land is not fit for a pasture; it could be drained and thus improved. It is essential to

have our barns of sufficient size to house all our hay as well as all our cows; it should be arranged with reference to convenience in handling fodder, and stock barns and farm houses should be as near each other as is consistent with health and cleanliness. Differed with many of his neighbors in regard to shade for cows; did not want any for his; it only tended to draw cows together in squads to fight flies—and each other—when they ought to be feeding; droppings would draw flies, and would also be lost as a fertilizer. Shade is not essential. Stagnant pools were to be avoided; cows would stand in them, and return to the stable in no condition to milk or handle. Our new lands were not adapted to plowing; must be reclaimed first. All our farms could be made good dairy farms if rightly handled.

JUDGE WILCOX said: First the land should be capable of producing good corn, oats, and grass; they are the main essentials. The farm should be as compact as possible. Should have the purest of water. Springs are preferable. Had two farms; one was supplied by spring, at no cost, not five dollars per year; the other was supplied by wind-mill, which was indispensable to that farm, as creek was remote from buildings. It was essential to have good water. Must not have all low land; varieties of soil was good, so as to allow cows a change; would not say much on this subject, as he would talk again to-morrow. Every dairyman should keep an account with his farm, to see how he was doing; expense was an important matter on a farm. The barns should be light, airy, and cleanly, and constructed in a durable manner for cattle; floors should be paved with stone; had one barn with paved floor which had been in use for twenty years; used cobble stones; the drops, or drains, should be flagged. Had one built in 1851; had not cost him twenty dollars for repairs since; floors would rot and sills decay, not so with paving; were less liable to odors or foul matter underneath them; in fact, floors are the principal cause of bad odors in our cow barns.

Where paving is used the urine is absorbed in the litter, and thus saved with the manure; had removed paving after many years standing and found the sand underneath perfectly clean and dry, as when put down. Under most floors in dairy barns was a complete cess-pool, and no amount of ventilation can remove the odors. Should have plenty of fresh air; barn should be high between joints, so air could freely circulate among stock. In one barn had sixteen windows; top sash he left out in warm weather; used wire screens to keep out flies in summer, and used blinds in winter. Ventilation is of great importance; when doors and windows are closed and the barn is full of cattle, the air soons becomes really foul. The convenience of the barn is also important; as well as the convenience of getting the milk to the cooler. A good board fence, eight or ten feet high, should protect the yard. The house is also of great importance on a dairy farm. It should front so as to get as much sun as possible, and receive a free circulation of air. Many dairymen do not build as to comfort; some build with the front north, which is wrong when it can be avoided. The rooms most used should be the pleasantest, and all should be arranged with a view to the convenience and comfort of the family.

On motion the chair now appointed the following Committee on Finance:

E. H. Seward, J. R. Mc Lean, and C. H. Larkin.

On motion, adjourned to meet at 7:30 p. m., to listen to an address from Prof. G. E Morrow, of the Illinois State Industrial University.

EVENING SESSION.

TUESDAY, 7:30 P. M.

Convention met pursuant to adjournment, when Prof. Morrow, delivered the following address. Subject, "The future of the western dairy interest."

G. E. MORROW'S PAPER.

"The outlook for western dairy interest."

If we look to the past of our western dairy interests as a means by which we may predict their future, we find some fluctuations, some reverses, but on the whole a marvelously rapid growth and remarkable prosperity. No other branch of American agriculture, engaging the attention of an equal number of men, with no greater capital, has been more prosperous than has the dairy since the close of the war of the rebellion—if indeed any has been equally prosperous. The introduction of the factory system of cheese making—the only case in which co-operation has been so directly and successfully applied in American agriculture—was followed by an extension of the dairy region, and increase of the quantity and improvement in the quality of our cheese product almost or quite unprecedented in the history of agriculture. A little less than ten years since, in this city of Elgin, I for the first time, attended a dairy convention. There was much interest; the business of dairying as a main feature of farming, had already reached considerable proportions, but compared with what it now is in the West, there had been but the very commencement.

If asked why dairying should have so generally proved profitable in those sections in East and West where it has been intelligently pursued, I should say: largely because it has compelled work—work daily and throughout the year; that it has made a fair degree of skill and intelligence absolutely necessary; that it has developed a fair knowledge of business principles; that it has been largely a cash business.

If we look to the present, we find some things not so favorable. The dairy interest, in common with all other business interests of the country,

is somewhat depressed. The area in which it is pursued as a prominent feature has been vastly enlarged; the present demand for dairy products has been nearly, at times fully, supplied. The margin of profit on butter and cheese has often been small, and considerable quantities have been sold for less than cost of production. There has been less of complaint among western dairymen than among any other considerable class of western farmers, but there has, of late, been some talk of over-production, of unequal distribution of profits, etc.

Turning from the past and the present to the future, I can but believe that our dairy interests are not again to enjoy an equal prosperity with that of the most favored part of the past. It is to share in the changing conditions which have come and are coming to all American agriculture. We have been living in wonderfully favorable conditions—perhaps more so, in regard to accumulation of wealth, than any other great people ever enjoyed. To succeed at least reasonably well, to commence with little or nothing and, by middle or old age, to accumulate a fair competence, has been the rule rather than the exception with our farmers. The peasantry of other lands, with little training, little skill, little money, ignorant of our language, our modes of farming, even these have made success the rule and failure the exception. In other countries this has not been so. The hard times of which we now complain are not peculiar to farming nor to America. Other callings equally suffer, and many much more severely; other countries feel the financial depression even to a greater degree. The British farmer is in worse plight than is the American. With a denser population, with closer competition, the struggle for success will, to many, be changed to a struggle for life. Dairy profits will not be so large in the future as they have sometimes been in the past.

There is now no monopoly of territory in which dairying may be pursued under reasonably favorable natural conditions. The time was when only a narrow belt of country was believed fitted for the dairy, and this did not extend, at most, beyond Ohio. Common sense and enterprise proved that much of the Northwest was admirably adapted for successful dairying, and now we must admit that good butter and good cheese can be, have been, and are being produced much further South and West than we once thought possible. Some regions are better than others, but wherever good grass grows, good water can be found and there is a climate not injurious to man or cow, there no insurmountable obstacle to dairying exists.

There is now no monopoly of the knowledge requisite to commencing in dairying. Thanks, largely, to the published proceedings of

such meetings as this, to agricultural papers, to dairy books, anyone can now learn much about how to succeed in dairying.

But the dairy interest is to prosper—prosper as well as most branches of agriculture, and better than many. The broad general rule will hold true here: that no needed calling, no needed producing interest can remain permanently depressed. Milk, butter, cheese, will continue to be used and in increasing quantities. The active and, I believe, the relative consumption must increase, and this demand will be supplied at a fair profit, in any series of years. Let us bear in mind that one of the chief reasons for its success in the past, is an element which will always tend to keep many farmers from engaging in the dairy business, They object to its confining nature, to being compelled to be at home night and morning seven days in every week.

The dairy interest, then, while not to have wonderful profits, is to prosper fairly, is to increase and spread over more of our country, but, except in the neighborhood of cities, supplying which with milk is to be an increasingly important part of the business, the tendency will be to make the dairy less an exclusive specialty, and more a leading feature of a somewhat diversified farming.

As a rule, I believe even western dairymen will find it directly profitable to do what I have for years advocated as desirable—raise their own cows rather than rely on purchasing to keep up their herds. They can do this as cheaply as others, and can, by so doing, secure better cows; can improve the average quality instead of tending to deteriorate it as has been the effect of the practice of relying on purchased stock. Many exceptional cases admitted, the western dairyman will find it advisable to look somewhat to the beef producing ability of his cows as well as to their milk producing qualities. The disposal of old or undesirable cows is to be an increasingly important question, and the time is coming when the bull calves on dairy farms will not be deaconed. Looking even to production of other crops for sale need not make the dairyman feel he is going astray.

While the foreign demand must long continue a most important feature in our cheese markets, and increase in importance as to butter, the suggestion I have often made to western dairymen, needs to be repeated: We should never lose sight of the home demand, never neglect an opportunity to develop it. Americans are butter eaters but not cheese eaters, as are the people of Europe. If we consumed cheese in equal quantities with the English, our present manufacture would barely supply the home demand. As a help to a larger home demand, I have urged the manufacture of a greater variety of styles of cheese. It seems peculiarly strange that with

the inventive disposition of Americans, their proverbial independence and egotism, most manufactures should be aiming at the same general standard. It is not so in Europe. At a recent dairy show, one dealer exhibited over seventy varieties of cheese, differing widely in size, shape, color and taste. We have many tastes to gratify among our own people, and greater variety would much stimulate demand. Sometime, somebody will discover the mode of meeting the practical difficulties in producing a satisfactory small cheese, of such size that it can go into the retail trade for sale without cutting.

There has been a great improvement in the reputation of western dairy products—both butter and cheese, but there is still room for effort to increase the local reputation. These efforts should not be made in a too narrow spirit. If one can improve the general quality of all the cheese produced in his county, he is aiding his own prosperity, unless indeed he be relying on a special, limited local market. Reputations can be lost as well as made. A State lying east of us stands far lower as a cheese producer than she did a few years since. The cause is mainly, too much skimming. Another western State, as far west as Illinois, to-day holds a first rank for the quality of her cheese; in that State less skimming has been done than in any other of which I know.

The old question, whether the West could successfully compete with the East in dairy products, I count fully settled. Each section has its advantages, but the cheaper and more fertile lands, the abundant grass and low priced grains, the lower priced cows, and other advantages enjoyed by the West, fully counterbalance any superiority in other respects on the part of the East. There is room enough for both sections, and may be demand enough for all their dairy products.

After all, success in dairying, the future prosperity of the dairy interest, depends very largely on the character of the men engaged in it. In the new conditions we are meeting and must continue to meet, this will be increasingly true. The trained mind, the greater brain power, is to be a larger element of success than in the past. I believe there is a bright future for American agriculture and for this special interest among the rest, but trained, disciplined men will be needed. General and special education is to be more of a necessity for the farmer than it has been in the past. Not a mere training in manual labor, not a narrow education as to practice will be best, but such an education as will make the best man; understanding his business and knowing something besides this, that he may better understand it.

PROF. HALL did not expect to speak. The first dairy convention he ever attended was at Elgin. Came to learn how to handle butter. Kept his ears open to all the arguments. Treasured up what seemed consistent. Was introduced to Mr. Wanzer; went to his factory and learned many things; made a good article and got a good price for it; felt happy. Wanzer said, wash the butter. Boies said, must not use water ; and, he too got a good price for his butter. Also went to Dr. Woodworth's, and saw his mode. Would not take one hundred dollars for what he learned. Does us good after we get home. Tried experiments with deep setters; so also as to shade in pastures. Learned much from Prof. Morrow, but could not believe quite all he said; could not agree with all good men, but learned a little from all. Watched for the articles signed "G. E. M." in the agricultural papers, for he knew they were always good. Was a little sensitive as regards Jerseys; thought that to about evenly mix up Jerseys and Short-Horns, you would have the Holstein; they combine in a wonderful degree the beef and milk qualities; Jerseys better for butter, Short-Horns better for beef. If there was a cow that could produce seventy-five pounds more butter per year than his, he wanted her; seventy-five pounds for ten years was seven hundred and fifty pounds; at twenty cents per pound it amounted to one hundred and fifty dollars, which is more than the beef of any animal is worth. Had tested nine cows this summer; his friend had tested fifteen; it required a great deal of time and patience to churn nine seperate milkings and keep the product separate, each day; it took money to make these experiments. One makes eight ounces and the other twenty ounces per day; what is the difference between these cows; it costs as much to keep one as the other, while the twenty ounce cow is worth vastly more than the other. It does not seem right to mix the breeds; each should be bred for their own particular merit; perhaps the grades are as good as any for the dairy. As to hard times, it seems to me that the

farmers are just above them. All taken into account, depreciation in all other property far exceeds that of the farm. Are not the farmer's profits as much now as ever? One pound of butter will buy five yards of calico. Are we not now making just as good profit as ever? The better plan is to get a better price for what we make. We must produce cheaper and thus make more profit; if we can produce it one cent less, it is better than to get one cent more for it.

PROF. MORROW thought PROF. HALL'S argument possessed a good many "ifs;" if she gave seventy-five pounds more, etc. It is not true that good cows of one breed will yield seventy-five pounds more than one of another breed. No one wants a horse who possesses all the good points. It is a good thing to breed for milk in a good size.

PROF. HALL said: Even if twenty-five pounds could be had from one cow more than another, it would very soon pay for the cow.

GENERAL PARSONS, of Clay County, said: We must go from home to learn of ourselves. Last year his friends sent a committee to this convention to learn of the dairy business. When they returned home they called a meeting of the farmers, to hear the report of this committee; the meeting was of great interest; and now, this year he had come here to learn. Had supposed that all points pertaining to dairying had been finally settled, so that no two dairymen held two opinions as to the same plan, but found it altogether different; every dairyman had a mind and plan of his own. Was surprised to hear from PROF. MORROW that the future outlook for the dairy interest is unfavorable; we all know that all business is dull and unsatisfactory. In his county everything was unfavorable. Much of the land was under water early in the season; small grain could not be cut; they raised corn, corn, corn, every year, and their land grew poorer and poorer every year. He did not think the outlook for dairying was unfavorable; wherever he saw dairying he noticed good

barns, fine houses, and good improvements, and the best farms—and were growing better every year. We export largely, and will in time export to all parts of the world. We ought to cultivate our home market; but our export trade is encouraging. In his location they raise corn, corn, until the soil is becoming ruined. No hay should be shipped to market; it should all be fed on the farm. It did not seem to him as though the business could fail. The Cotton States are constantly growing poorer every year, by their constantly raising one crop. Pork and grain all goes from the north; each year the planter is without money to go on; they grow poorer and poorer.

WM. PATTERSON made some inquiries in regard to the essentials of a good dairy farm, as regards soil, etc.

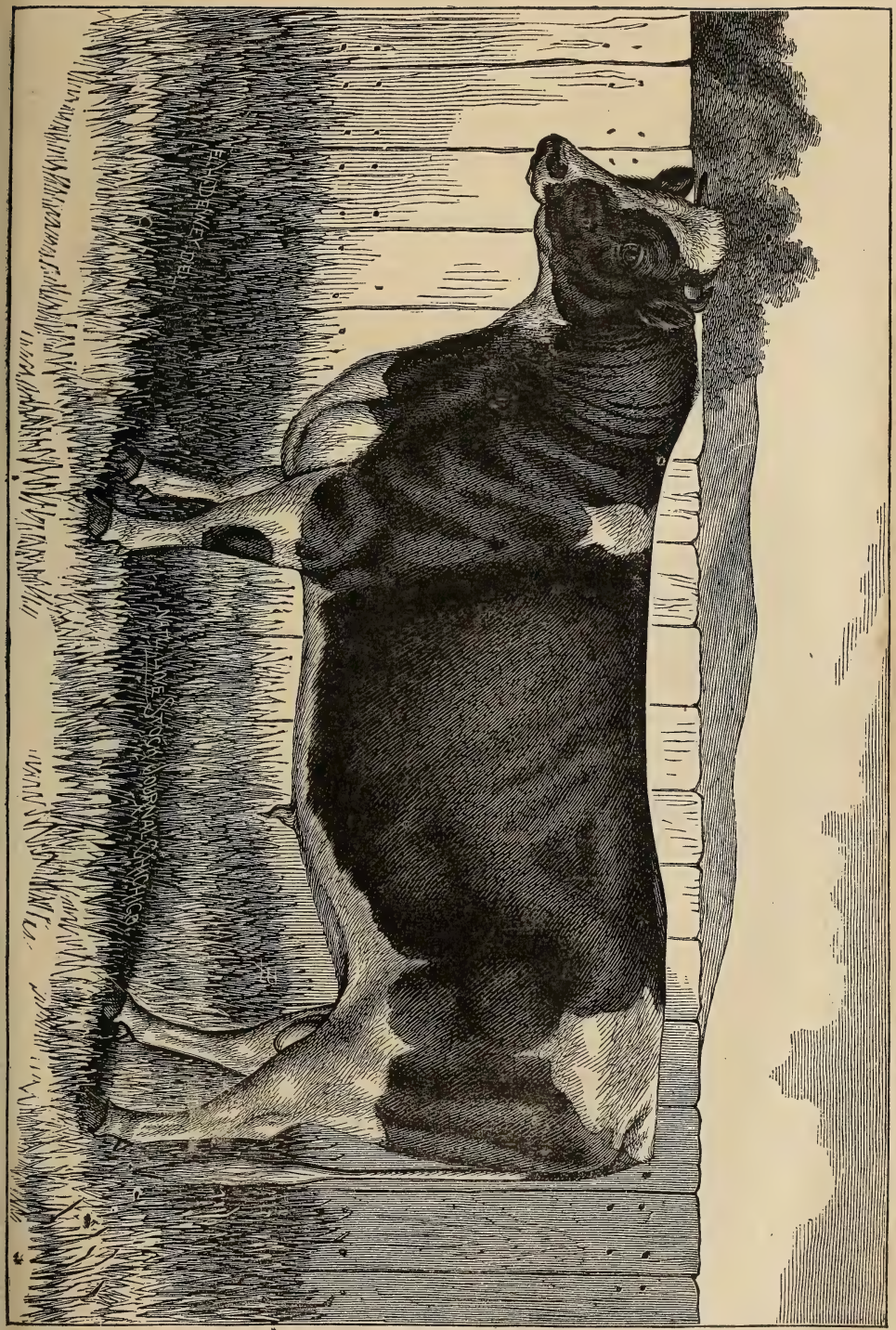
D. C. SCOFIELD: As to good cows, his practice was to use as good a male as possible; then changed so as to get three-fourth blood. Wanted large sized bodies.

E. H. SEWARD thought dairymen should use great discretion as to breeding. Could tell by the looks of a calf what she would be when grown. Could not replace his cows by purchase; must raise his own calves.

D. C. SCOFIELD wanted to know the milking points of a bull.

E. H. SEWARD: Must have slim head, milk mirror, etc.; must have all the marks of a heifer; must be from good milking stock.

On motion the convention now adjourned to meet to-morrow morning, at 9 a. m.



Holstein Bull, "MONITOR."

Age 1 year, and 8 months. Weight 1,200 lbs. Imported by GEO. E. BROWN, Elgin, Ill.

WEDNESDAY, 9 A. M.

Convention met pursuant to adjournment, with largely increased attendance.

On motion, Topics Nos. 3 and 4 were consolidated; both covering nearly the same ground, that of "Fertilizers."

DR. S. M. SLADE was called for to open this discussion. He had not prepared any paper upon this subject. Said we should all understand chemical fertilizers better than we do. His experience had been limited, and mostly by observation. In Ontario County, N. Y., only twelve bushels of wheat could be raised per acre, while in Virginia, thirty miles from Washington, seventeen bushels could be raised, from land in use over one hundred years; even better than Genesee County. What did they use to get this yield? Simply about two hundred and fifty pounds of guano per acre; the land produced enough more to doubly pay for the guano. As to fruit-growing, he had only used the phosphates; none of them had ever paid, considering time and expense. The dairyman could handle coarse manure better than other farmers, as he kept more labor about him; with others, who do not keep so much help on the farm, perhaps concentrated fertilizers would be preferable, as much time is saved in applying, and get returns the first season. Believed chemical fertilizers, all considered, to be preferable.

DR. J. WOODWORTH: Came as a pupil to learn. Often one who knows the least talks the most; so he would be careful. His experience with chemicals had been mostly with salt. All land should be rotated. His principal fertilizer was common barn-yard manure, and should be composted and applied immediately in contact with the

grain sown. Often planted corn on land used for corn the previous year. Would not plow; merely split the rows, putting in furrow a layer of compost manure; from this he derived the very best results. Planted his corn in drills; kept one man in field constantly, when planting, to apply the manure. Could plainly see marked difference where manure was applied; last year he put on eight loads per acre; this year, six loads; thought this the best plan: to apply common manure. Land tilled in this manner, was mellow, easily worked, and free from weeds. Harrowed it over immediately after planting, so as to cover all the manure; he considered this plan better than twenty or thirty loads per acre as commonly applied, by spreading broadcast on top of the land. The muck, or sink-hole was valuable on the farm; it was a valuable fertilizer; made soils were good. Had better buy your flour than to raise wheat, as it only drew chinch bugs, with a poor prospect of a crop. Top dressing in Spring is good. Would not plow for oats, if done for nothing. Hoped others would speak upon this subject, as he considered it very important.

A member inquired as to the soil of DR. WOODWORTH'S land.

DR. WOODWORTH: As a whole, rather sandy.

PROF. HALL: Would not take much time; had had but little experience. We wanted facts, not guesses. As to chemical fertilizers, what was good for one farm would ruin another. We must find out by actual experiment just what we want, and try and supply it. All soils want either potash, nitrogen or phosphoric acid; must find out which we need; each one must find out for himself; each one should begin lightly, as we may make mistakes. Salt, put upon land, may unlock other properties, which otherwise would lie dormant. Lime is not often deficient, but like salt, may unlock other properties. MR. SLADE used eight hundred bushels of ashes with no good result, while

upon his land he obtained the very best results from ashes. Ashes were rich in phosphoric acid and potash. It would scarcely pay to send to New York for fertilizers when we had so many at hand. Salt and barn-yard manure were both good; as was hen-manure. His neighbor drew muck and mixed salt and lime; put it on twenty acres of land; got twenty-five bushels more corn per acre than when not used; this year the result was not as good as last year. To mix salt and lime with barn-yard manure, would be fatal to all as a fertilizer.

D. C. Scofield: Had had experience with ashes; paid five dollars for four thousand bushels; put on poor sandy soil and raised four tons of hay per acre from the land. If we apply unleached ashes we must know the soil. Barn-yard manure should not be allowed to leach in the yard, or much of its value would be lost; thought the best plan was to draw direct from barn to field when fresh, thus saving the liquid portion of the manure, which is the most valuable.

Thomas Bishop wanted to know where we should all go for ashes; he made about two barrowfulls per year, but it was out of the question for all farmers, as a rule, to get them; we must have something else.

Dr. Slade was of the same opinion; all could not get them; he considered them good, but they could not be had. Mr. Smith had used a large amount, but did not consider them worth drawing.

A. Smith said he had used five hundred or six hundred bushels with very poor results.

Prof. Morrow being called for, said: They were making experiments at Champaign with various kinds of fertilizers; hoped before long that they could give the exact results. We could not rely upon one test alone. We must find exactly from what the benefit comes. In making

experiments, do not try upon too large a scale; begin small. It is hard to say we know; it takes a long time to prove or disprove many things. One person in England had experimented thirty-six times on wheat. We should measure and weigh accurately. In testing fertilizers, long strips of land are best, so as to get as much variety of soil and climate as possible. Manure means manual, or working; i. e., working the soils. All plants derive less of their sustenance from the soil than from the air. All that goes up must come down. Ten or twelve things makes up the plant; so with animals. Chemical manures are good; it is mostly furnished from air, water, etc. Ashes could not in this country be supplied in sufficiently large quantities to be practicable. Barn-yard manure must be the main stand-by for the western farmer; it contains all the properties which plant life demands or needs. It is true that it loses somewhat of ammonia, but to no serious extent. The soil goes on making itself; even poor soils if allowed to remain idle a few years; it will enrich itself so that it becomes new again.

JOHN KEATING was called for, but not having prepared a paper, would not speak.

ISRAEL BOIES had experimented with chemicals on a small lot formerly used as a nursery; used phosphates; put it on poor land in furrow, and planted top of it; also tried ten loads of barn-yard manure on same land; the phosphate produced corn one foot higher; could see effects of it on land for several years; was satisfied that all well rotted manure on grass land would yield double any other manure.

E. H. SEWARD had used many kinds of fertilizers; salt gave as good results with him as any.

DR. SLADE wanted to know the relative difference between fresh and well rotted manure; one was concen-

trated and the other not; how estimate it as to bulk, when applied to grass.

G. P. LORD had for years drawn out manure as fast as made, and got all the grass he could take care of; cut his stalks; they took up much of the liquid manure. Had used muck; put it on dry, sandy soil, with good effects.

MR. CHAPMAN, Sugar Grove, came to learn wisdom; was a small farmer; had experimented some with manures, which he considered of great importance; had no experience with chemicals. Barn-yard manure he considered the most important of all, and the most readily had and applied. Endorsed much which had been said. Preferred top dressing, done early in the season, the best; it should decompose in the field so that none will be lost. Cleaned his yards twice each year. As to clover as a fertilizer, he regarded it even of more importance than barn-yard manure; had kept his land up for many years by means of clover, plowing in when green; it was superior to any manure he had tried. Three successive crops on the same land was sufficient; land needs rest; should not be used constantly; must have rest same as an animal. Thought we all could learn much at these conventions; felt well paid for coming.

E. H. SEWARD wanted to know how he applied clover.

MR. CHAPMAN said the roots were good; he also often plowed under the second crop of clover.

LUTHER BARTLETT asked if the condition the land was left in didn't have as much to do with it as the clover.

S. K. WILLIAMS wanted to know what was meant by resting soils.

MR. CHAPMAN said that to keep constantly plowing and taking a crop from the same land, and putting nothing

back, it will soon become worthless; must have rest or fertilizers.

H. C. MEAD did not think it best to plow manure in too deep; did not get any benefit the first season and might not the second. On an adjoining lot to his, a row of trees shaded two rows of corn, which were much smaller than the others; was it the shade or the effects of the roots of the trees. Said Morrow looked like a professor; could he tell?

PROF. MORROW had supposed he looked like other men; was sorry to find to the contrary. He knew many thought that agricultural editors knew but little about farming, and that professors knew less; it might be so. However, roots of trees had much to do with crops growing in close proximity. As to plowing in manure, it reminded him of the man who put his dinner in his hat, instead of eating it; it didn't seem to invigorate much; he did not think any fertilizer could be exhausted in one year.

E. G. KETCHUM thought one load of barn-yard manure put on top, as good as two plowed in; especially on grass land; to plow in manure he considered as labor lost, as the soil would consume it as fast as applied; could see no results from it.

L. W. SHELDON, Union, Illinois, furnished the following paper on "Fertilizers."

L. W. SHELDON'S PAPER.

MR. PRESIDENT AND GENTLEMEN: I am an advocate of any kind of fertilizers that will induce plant growth. Chemical fertilizers can be very profitably used if properly applied, but the value of each can only be ascertained by careful experiments. The farmer with a cold, clay soil cannot expect the same kind of fertilizer to do the same for his crops that a brother farmer realizes upon a warm, sandy soil. All fertilizers need a certain amount of moisture to fit them for plant food; some much more than others. All should be incorporated with the surface soil in early

Spring, in order to supply the need of the plant. I have found bone super phosphate valuable upon warm sandy soil, with three hundred pounds per acre. Common salt is superior to the above, with one barrel per acre; wood ashes and quick-lime are both valuable at the rate of eight bushels per acre. I have never known a chemical fertilizer to prove of any value when plowed under or buried beneath the reach of the plant.

A lamentation comes through the columns of the *Country Gentleman* of last week, from a farmer in Pennsylvania, who experimented with super phosphate by plowing it under six inches; he came to the conclusion that he had better bought his corn. Where I have experimented, the value of the crop has been increased from twenty to forty per cent., upon corn, oats, and grass land. From what I have seen of these fertilizers, I would not hesitate in recommending them on warm sandy soil, where commercial fertilizers are necessary. I believe super phosphate valuable upon most soils.

On motion the President appointed G. P. Lord, J. R. McLean, and S. K. Williams, as a committee on resolutions of condolence in regard to death of members since our last meeting.

On motion, I. Boies, F. H. Hall, and S. Wilcox, were made a committee on nomination of officers for the ensuing year.

Judge Wilcox here spoke of the bill which had been prepared and laid before our Legislature, with reference to the adulteration of milk; he said it had been allowed to sleep the sleep of negligence; our legislators could see no political significance in it, therefore paid no attention; it ought to be attended to; it was important to every dairyman and should be passed at our next legislature.

M. H. Thompson offered the following, which was adopted:

Moved that a committee of five be appointed, which shall be known as a Committee on Legislation, whose duty it shall be to lay facts and figures before the next session

of our Legislature, and use their best endeavors to secure such legislation as they may deem proper and for the best interests of this Association.

The following were appointed such committee: G. P. LORD, Elgin; GEN. L. B. PARSONS, Flora; PROF. F. H. HALL, Sugar Grove; C. J. FERRIS, Galesburg; and H. W. MEAD, Hebron.

On motion, S. WILCOX, F. H. HALL, and I. BOIES, were made a Committee on Nominations.

On motion, L. BARTLETT, J. R. MC LEAN, and BENJ. COX, were made a Committee on Ways and Means.

PROF. F. H. HALL moved that when we adjourn, it be to meet next year at Sugar Grove, when an amendment was offered that Elgin be substituted for Sugar Grove. After considerable friendly discussion was held, it was voted to let the whole matter lie on the table until 4 p. m., at which time it was made a special order of business. The convention now adjourned to meet at 1:30 p. m.

WEDNESDAY, 1:30 P. M.

Convention called to order, and while a large number of members were visiting the works of the Illinois Condensing Company, the following reports of officers were read, which were received and filed.

TREASURER'S REPORT.

To cash on hand at last report	$ 4 25
To cash received for membership, etc., 1876	38.00
To cash on hand to balance	$42.25

H. W. MEAD, Treasurer.

SECRETARY'S REPORT.

To cash on hand at last report	$25.13	
To cash received of H. W. Mead, Treasurer	40.00	
To cash received from advertising	72.50	
To cash received for membership	11.00	
To cash received for sale of reports	1.25	
By cash paid S. L. Taylor, for printing		$100.00
By cash paid sundry other printing, etc		14.75
By cash paid engraving plates, etc		8.25
By cash paid for stationery, postage, expenses, et		25.84
By cash on hand to balance		1.04
	$149.88	$149.88

M. H. THOMPSON, Secretary.

Topic No. 5—"How much per pound is a fair compensation for making butter, including salt, packages, etc., and how much additional for marketing."

THOMAS BISHOP said the price now paid seemed too high. He had no experience as a manufacturer; he knew this, that his neighbor, Mr. D. Johnson, began manufacturing a few years ago, poor; now he owns two or three factories and is a rich man, while all the farmers about him who have patronized the factories, are just where they were years ago. Expenses of making butter were not large; a little salt goes a long way in butter making. He believed the profits of two or three factories would buy a farm every year.

L. C. WARD, St. Charles, said he was not a speaker. As to making butter alone, he had no experience; as to making both, he had. To run a factory on three thousand pounds per day, would ruin anyone; twenty thousand pounds would do, at three and one-half and four cents for butter. He knew that some factories in the East worked up milk into cheese for one and one-half cents per pound, while two and one-half was charged. He had been to some trouble to get reports from some of those Eastern factories. In Chataqua County, N. Y., while they were paying a dividend of ninety cents per one hundred pounds of milk. he was paying, the same time, one hundred and five cents per one hundred pounds of milk, he charging two and one-half cents for manufacturing, which was the cheapest for the dairyman; it was an easy problem to figure; he paid fifteen cents per one hundred pounds more than they did; they could afford to manufacture cheaper than he could; they often used old sheds (or something no better,) for factories; no capital invested, while he had fifteen thousand dollars invested in his factory which was perishable property. Products would sell better out of a nice, clean, well-regulated factory, than an old rickety shed. In the East, factorymen employed women at one dollar per day; he hired good, experienced help; had to pay over three dollars per day; this must be done where a factoryman warrants his products; no cheap help will do where a good article is desired; you must hire a good man with a good head on him. Could work up fifty thousand pounds as well as five thousand pounds per day. It was worth a great deal to patrons to have their product sold, and always at the highest price; sold all to one man. It was not a fact that the majority of patrons to cheese factories were dissatisfied; could always hold his patrons; they were constantly on the increase. The fact is, the western farmers charge a little more than in the East, but pay their patrons a great deal more. Small factories should be consolidated, so as to cheapen manufacture. Must have good factory buildings;

sheds will not do: i. e., for western people. Factorymen should guarantee their product, prime, and then should charge a fair price, and no more. As long as patrons were satisfied, he thought others ought to be.

ISRAEL BOIES: Could not add much to what had been said. The amount handled had much to do with what ought to be paid for manufacturing. He paid sixty dollars per month for a man in his factory, and give his own time —as the "old man" wasn't "good for much anyway;" he kept none but good help. It cost but little more to handle eight thousand pounds than two thousand pounds. He makes exclusively, butter; of course, where both are made the profit is more. He agreed fully with Mr. Ward; thought his argument unanswerable, if facts are used.

S. K. WILLIAMS: Was part owner of a factory; run five thousand pounds per day, and after all expenses were paid, he knew the stockholders received thirty per cent. on their stock; how it was done he could not tell, only he knew he received that magnificent dividend.

THOS. ST JOHN: Was surprised to hear any factory-man say that butter could not be made for less than five cents per pound. He fully corroborated MR. WILLIAMS' statement as to the thirty per cent. dividend. He made for four cents, and had charge of the above factory referred to. Factory cost two thousand dollars; was just as good for what it was made for as a fifteen thousand dollar factory; did not think such a factory could be run to advantage, and that a large amount of useless capital was tied up for farmers to pay interest on.

JUDGE WILCOX said he had written to MR. WILLARD to ascertain what prices were paid in the East; had also made figures for himself, which were as follows: Take for example a dairy of fifty cows; say an average yield is one and eight-tenths gallons per day; in one year the fifty

cows would give thirty-two thousand five hundred and eighty gallons. Now allowing two and one-half gallons of milk to make one pound of butter, we have thirteen thousand one hundred and forty pounds, for making which the farmers pay five cents per pound, amounting to six hundred and fifty-seven dollars; the milk must be delivered three hundred and sixty five times each year; to allow two and one-half hours each trip would be fair, which would make nine hundred and twelve hours, or about ninety-one working days, which for man and team is low at three dollars per day, amounting to two hundred and seventy-three dollars, which added to the six hundred and fifty-seven dollars for making, amounts to the handsome sum of nine hundred and thirty dollars, which one farmer of fifty cows is compelled to pay to have his milked worked up. Now take ten dairies, and we have the sum nine thousand three hundred dollars, or about the price of a good farm each year; should twenty dairies patronize one factory, we see at a glance eighteen thousand six hundred dollars would be received. I do not know just what share of this is profit, but I do know that it is far more than dairymen can afford to pay. There is no doubt in my mind but what the price now paid to factorymen is exorbitant, and should not be allowed or paid. The factorymen are really getting the cream off all our farms, and leave us only the skim milk; but it is all right if we agree to pay it; but we should not agree to. It is a neat, clean thing; no risk; he has his, anyway; the dairyman comes in second, every time; he can't lose; the money is in his own hands. Of course fancy men cost fancy prices, but they were unnecessary; it only adds to the cost of manufacture. In the East, milk can be made up one and one-quarter cent per pound for cheese, and three cents for butter, and why not here? But these prices do not include marketing and insurance. Of course large factories, receiving large amounts, can handle with less expense. The fact is, everything else has gone down, and the price

of making butter and cheese ought to go down too. No business was so sure; no risk; with but little capital invested.

L. C. WARD said that from the letter of Willard's it appeared that five cents and two cents were charged east. Now if you need a lawyer do you employ a good one or a shyster because he is cheap. He found it paid best to employ first-class men in all professions. One Eastern factory run upon the cheap plan paid twenty-two cents per hundred pounds; this may do on paper, but it will not satisfy patrons. If his patrons would furnish him forty thousand pounds per day, he would pay them back six dollars per month or seventy-two hundred dollars per year; he could afford to do it upon so large an amount. Could build sheds and run them by women, but could not pay the patrons a living dividend by so doing.

JUDGE WILCOX had always found that in any business the shyster charged the most for his services. It was an important question and should be discussed fairly; if the prices charged five years ago were fair then, they are nof fair now; labor as well as real estate must come down; it not it is not fair; as it now is. The question is, " What is a fair price, etc." All men should have a fair compensation for their labor, but it should not reach extortion. Every person who is engaged in any legitimate business should make money, if they are good business men; but if cheese can be made in the East for one and one-quarter cents per pound, it can and ought to be done here. He did not believe the highest price always brought the best labor. He was in earnest in this matter, and wanted to bring it fairly before the dairymen. If all dairymen would keep their own accounts it would prove another thing; as it now is, all is left to the factoryman; he keeps your accounts, and at stated periods pays you just what he sees fit, and no more; the dairyman has no idea whether it is what really belongs to him or not.

WARD must speak once more in behalf of his patrons, who were not so stupid as the Judge would make them appear. They were satisfied with the manner in which his accounts were kept, and the price they received.

WILCOX: Do you have a committee to examine your books?

WARD: Yes sir, and composed of smart business men, too. They had access to his books at all times, and reported to his patrons as often as they pleased. Insurance is higher on our factories than on any other kind of property; the building good for nothing else. If you burn out your trade is lost, while if a merchant burns out he can move across the street, and in two days is as good as ever and his business saved. Insisted that skilled labor was always the cheapest; once tried a cheap man and he proved a very dear one in the end. My books are kept open for all whom they concern; every item was booked and had been for seven years.

DR. R. R. STONE wanted to put in a word for the poor, persecuted manufacturer. As to the price as now paid for making butter being too high, it was not a fact; the maker had to guarantee the product and often paid many losses. To make butter and furnish everything, is small enough at five cents per pound; for less you would make a failure. Good factory butter could be sold to-day for thirty-four to thirty-five cents, while the private dairy sold slow at twenty-five cents. At these figures the dairyman could pay five cents, and then make five cents more for himself. Why should he complain? His experience and observation led him to believe that factorymen, as a rule, were not richer than lawyers or other men. There were great risks attached to the business; he had been at it for twelve years and he felt quite sure that he was a long way from being rich yet.

E. G. KETCHUM thought that most of the factories were originally built by the farmers, and were furnished the manufacturers; in fact many of them have no money in them at all; they are working up the farmer's milk with he farmer's money; in fact the farmers furnish the capital for the whole thing.

ROWLAND said: You take your milk to the factory; you receive a small paper, saying, so much milk, and at some subsequent time you were notified that so much money awaited you, as your share of the dividend for some particular month, and that was about all you knew about it. The books should be shown and a competent committee look them over and see if the yield is what it ought to be for the milk received.

DR. R. R. STONE: Always kept books and they were open at all times to his patrons, all of whom were satisfied.

M. H. THOMPSON asked DR. STONE if he wanted to be put on record as saying that no private dairy-made butter commanded as high price as the factory quotations.

DR. STONE: I am wrong there; they do. I know individuals about here who get it, but they are the exception and not the rule.

On motion, it was voted to have no further discussion on Topics 5 and 6; that No. 7 be now taken up.

"The best methods of improving and supplying the dairy, the different breeds and their adaptation for dairy purposes."

The following paper was furnished by C. C. BUELL, of Rock Falls:

C. C. BUELL'S PAPER.

"The best method of improving and supplying the dairy. The different breeds and their adaptation for dairy purposes."

The objective point in the dairy business, so far as the dairy herd is concerned, is to secure a large quantity and the best quality of milk. Given the quantity the quality is the controling consideration. Given the quality the quantity takes lead. Further, the kind of product, whether butter or cheese, or both, enters as an important element into the problem. Nothing has been more clearly demonstrated than this: that there is a marked difference in the milk of individual cows, and an equally marked difference in the milk from different breeds of cows; some cows give a quality of milk especially adapted to make cheese; others are emphatically butter cows. The same is true of breeds; the milk of the Ayrshire cow has long ranked very high for cheese making; the milk of the Jersey cow is unrivaled for butter.

These statements suggest the line of our argument. The dairy herd can only be improved by breeding from superior individual cows, and from superior herds of cattle, for the kind of business carried on. As sure as like produces like, so sure will improvement follow. In the application of this view no one need go astray. The principles of correct practice in breeding, are well established. One is, never to use any but thoroughbred males; any others, no matter how fine in form or how perfect in other indications, are uncertain; to use such an animal at any price will not pay. Not only use only thoroughbred males of the breed selected, but use only such as are brought by dams of marked perfection. We should consider not only the quantity and quality of milk produced by the dam, form, size, and disposition, but also size of the teats and *style of milking*, whether easy and graceful, or hard, and a stripper besides, perhaps; we have seen thoroughbred cows of perfect pedigree and high valuation, which we would not receive into our herd for actual use in exchange for many a scrub cow, held at not one-fourth the value; he would not use a male descended from such a cow no matter how perfect the pedigree.

To secure a dairy herd for profit through actual performance at the pail, we know of no better foundation than selections from common stock, or the grades of other breeds. The cows descended from such stock, sired by a male of a milking breed of cattle, will, as a rule, possess the characteristics of the male side of the family, and be really good dairy animals. There will be exceptions: a percentage of poor cows; as indeed there is among thoroughbreds themselves, which should be at once discarded from

the herd; but in this direction and in this alone, we conceive, lies the road to improvement of the dairy.

As to the adaptation of different breeds of cattle to d airy purposes, I have had experience with common stock, grade Short-horns, grade Ayrshires, and Jerseys; I make butter; besides, I do not want a large, heavy cow for my pastures, therefore I have selected Jerseys; I have seen Jerseys that would have little value for me, but for the butter dairy, the superior type of Jersey cow, I believe to be much in advance of any other breed that I have had experience with. If I carried milk to the factory and pooled the product of my herd with that of others, or received so much a pound for it, I should not choose Jerseys; my neighbors who might have common stock, Ayrshires, Durhams, or Holsteins, would have too much advantage of me; I could not afford to produce good Jersey cow's milk for the same price as the milk of the other breeds named, but to go into my own milk-house the case would be altogether different. And this suggests what I believe to be true, that the factory system is, on general principles, inimical to the production of the best quality of milk, and hence to the breeding of dairy stock characterized by the production of a rich quality of milk. It is useless to expect anything else, for it will not come; the large milker will be the favorite among those who sell their milk, the rich milker will always be popular with those who manufacture the milk of their own dairies. We may as well drop this subject right here; I have little interest in breeds, as such, and do not expect to convince anyone who has. I would like, however, to see a radical change in the mode of dealing in high-priced dairy stock. The horse for speed is high-priced, because he has shown speed on the track, together with minor excellency, not because he is Hambletonian, Morgan, or any other stock. It is the greatest folly to pay a high price for a dairy cow, of whatever breed, whose value cannot be demonstrated by the amount of butter or cheese she is capable of producing. In this direction points the true way to improvement in dairy butter.

E. H. SEWARD said we now have only one mode of supplying the dairy, namely, the cow peddlers, who brought in good, bad, and very bad; this had been going on for ten years; it was the same in the East; they were now compelled to come West for cows, and thus the country was completely drained of good cows; the fact is, all our dairies, both East and West, are deteriorating; we must stop killing our calves; must raise our own cows; it is the

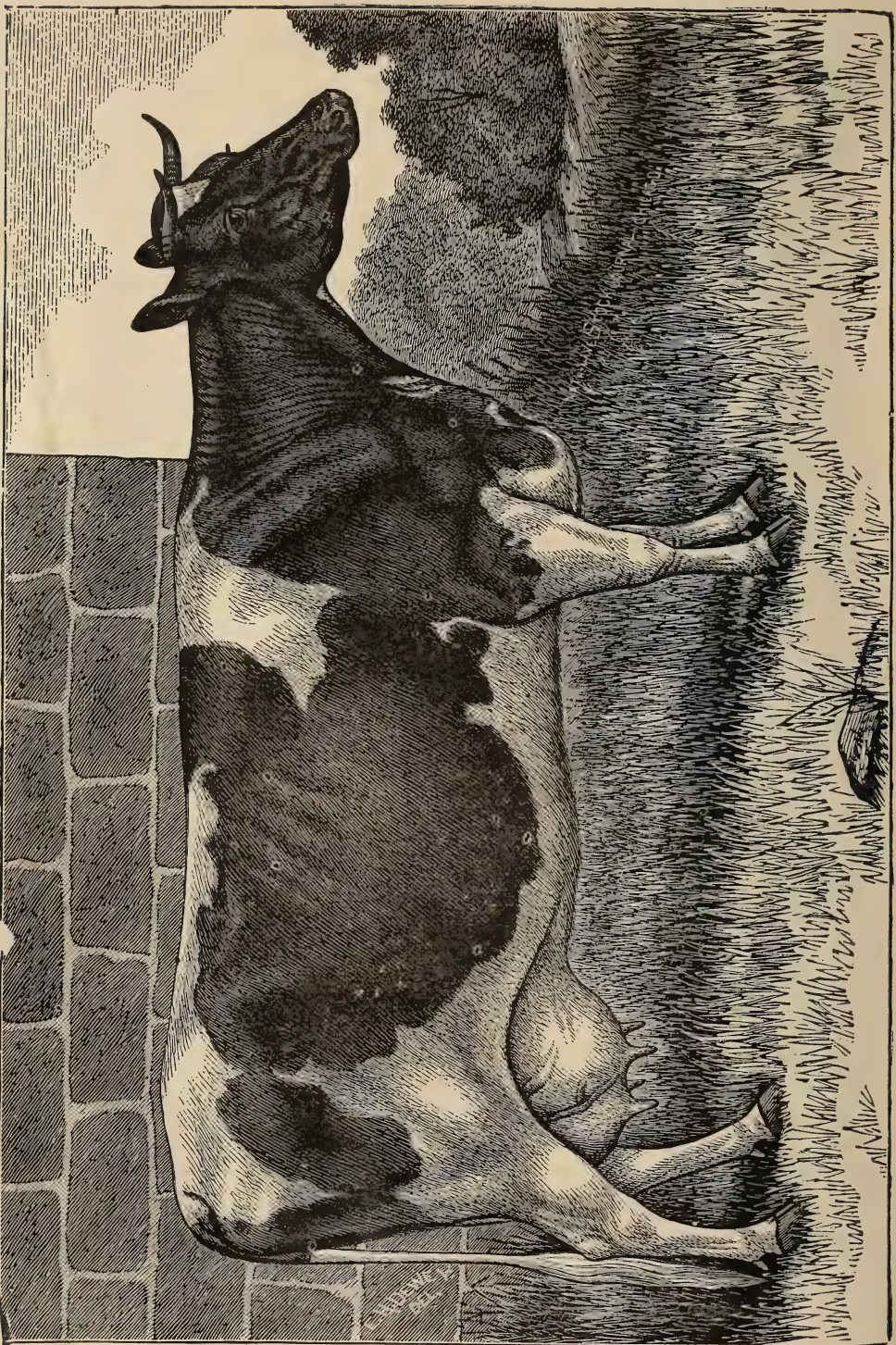
only way he knew of. As to breeds there were many good ones. Among the Short-Horns, the Patten cattle, from Kentucky, were a good milking stock, at the seventeenth cross. We must look to our male animals and have none but from milking families. The Holsteins were good; they combined many good points, and were undoubtedly good milkers. We should endeavor to secure large sized cattle, if all other points suit.

On motion it was voted that all papers sent in upon the different topics for discussion, be printed in full in the proceedings, and that the reading of the same before the convention be omitted.

S. S. MANN moved that a committee of three be appointed to examine and report upon the different breeds of dairy stock, as adapted to our climate, etc., and that such report be published in the proceedings of the association. This resolution drew out an extended discussion, each breed having their friends and champions. The little Jerseys had their friends as well as the more exalted Holsteins, and the "thoroughbred" native also came in for her share.

MR. MANN said as the question had been discussed pretty freely, he really wanted to know the best breed, and thought a committee would come at the facts about as nearly as the whole convention; but if there was to be any feeling upon the subject, he would cheerfully withdraw the motion, which he did, when all breeds at once stood on a par before the convention.

Four o'clock having arrived the special order was now taken up, and the final location of the convention for next year was settled. After much friendly discussion, wherein Sugar Grove seemed to have the lead for some time, finally a vote was taken, when the Chair decided that Elgin appeared to be the choice of the Convention, and con-



"MADAME SPAANZ,"

Imported 1876, by GEO. E. BROWN, Elgin, Ill.

sequently the vote was made unanimous that the next Convention be held at Elgin.

On motion the Convention now adjourned to meet at Mendelssohn Hall at 8 o'clock, to listen to an address from DR. JOHN M. GREGORY, of the Industrial University, Champaign, Illinois, and GEN. L. B. PARSONS, Flora, Illinois, President Ohio & M. R. R. Co.

EVENING SESSION.

MENDELSSOHN HALL, WEDNESDAY, 8 P. M.

Convention called to order as per adjournment, whereupon GEN. L. B. PARSONS, delivered the following address, his subject being "Transportation and its kindred connections."

L. B. PARSON'S PAPER.

"Transportation: its merits, importance, and future, as connected with production and exchange."

GENTLEMEN: This, as I understand, is a meeting of gentlemen connected with the dairy interest, the promotion of which has become a matter of great public as well as private importance, a branch of production of rapidly increasing magnitude, and which has in a brief period of time, extended from the partial occupation of a few counties in the Eastern States till it engages the attention of large sections of the West; resulting already, not only in supplying home consumption, and preventing a drain upon our resources to pay for importations; but in adding the large sum of fifteen to seventeen millions of dollars annually, to swell the aggregate of our foreign commerce and restore health and wealth to the nation's finances. Not only do the great interests already involved, demand all proper attention and encouragement, but with these we may reasonably expect an almost unlimited increase in the near future, of a production which not only adds so largely to the happiness of the human family, but to our national wealth.

In the southern part of the state, where I reside, though a land of corn and grass, yet we have hitherto given so little attention to dairy pro-

duction that it would be premature for me to expect to add to the interest or utility of your discussions of this subject; and although largely interested in general agriculture, I should hesitate to offer suggestions to those whose larger and more practical experience better prepares them for instructors. On these topics, I come rather as a learner. But I have thought that some remarks upon a subject of importance to all branches of agriculture, and upon which largely depends its future development and pecuniary success, might not be inappropriate to the present occasion. I mean the ways and means of exchanging our surplus products for those of other sections and nations: in other words, of getting them to market: or, in short, the subject of transportation. "Everybody," says one of our most eminent writers on political economy, "exchanges. Society is one vast hive of buyers and "sellers. All men have a natural right to exchange their labor or their "property with their fellow men. The laws of exchange are based on "nothing less solid than the will of God."

The greatest freedom is the greatest good, and every facility should be given to this end. It is of vital importance to each individual, every "section, the entire nation, "and it is a high-handed infringement of natural "right, a blow aimed at the life and source of property, when any authority "seeks to restrict, or refuses to encourage the freedom of exchange, except "it be justified by solid proof that other private or public rights, are "infringed thereby."

The productions most natural to our section, are grain, meats, and those of the dairy.

South Carolina produces rice; Louisianna, sugar; Mississippi and other States, cotton; China and Japan produce teas; South America, coffee; Germany and old and New England, manufactures. We need a part of their surplus, they of ours. How we can effect these exchanges with the least possible delay, risk and expense, is a great problem, in the right solution of which all people and nations are alike interested. Every unnecessary delay, risk or expense, obstructs this result, to the general injury and the just good of no one. Delay increases interest on capital; risk, insurance; and all undue cost hinders or obstructs. Civilization with its countless blessings, has ever followed in the track of commerce. Improvements in the mode of transportation have revolutionized nations, and brought the most distant into intimate relationship. The order of providence seems to be to unify humanity, to break down the barriers erected by the malice or folly of man, and make of one nation all the families of the earth. Thus, to-day we are the near neighbors, not only of

England, and France, but of Russia, China, Japan, and the remote islands of the sea. In turn those now unimportant cities and states of Tyre and Sidon, Genoa, Portugal, Spain and Holland, have through their commercial superiority commanded the seas, and gathered untold millions of treasure.

And to-day the history of the past, repeating itself, shows that the relative power and advancement of the leading nations of the earth is largely in proportion to their relative facilities for inter-communication and exchanges. In the front rank of nations in this respect, now stands England, holding a supremacy justly our own, and which would have been but for our civil war, when piratical cruisers, let loose by her criminal policy, swept our commerce from the ocean, and which through our unwise navigation laws, is but slowly reviving.

A glance back within the memory of many of us, shows a wonderful advance made in our own country in facilities of travel and transportation; a greater advance than the world ever before witnessed in centuries of time. Sixty or seventy years ago population and business centered along the sea coast, or mainly followed our navigable water courses. In those days the stage coach and the lumbering four-horse Pennsylvania wagon, were the only means of interior travel, and movement of products. Then came the Erie Canal, the grand opening of which some of us remember, quickly populating central and western New York, and opening wide the gates to the great West. It was then thought we had reached the goal of all reasonable expectation. Canals were the mania of the day, so much so that an eminent engineer pronounced rivers as mainly useful and designed by God for feeders to canals.

Then came our lake and river steam navigation with our national roads. And while the march of emigration and development was wonderful, yet still the long, tedious, and expensive mode of travel, requiring ten or fifteen days to reach what is now the center of our population, rendered the greater part of our own State valueless to the settler beyond securing the simplest means of existence, and almost wholly shut out from the world, so far as having any market for its surplus products.

Then came within the memory of many of us, in the order or providence, the greatest improvement of all, the railway, and cars moved by steam equally over mountain and plain, across rivers and deserts, penetrating the remotest sections, diffusing wealth, comfort, civilization and christianity with their untold blessings, through the land, and to a large extent superseding lake and river navigation, as they had superseded stage coaches and canals, and combining all that seemed desirable in transportation, viz.:

rapidity with economy, safety of movement with certainity of time, all united with the greatest comfort. So rapid has been this great work, that we have scarce had time to duly estimate its magnitude or importance.

It is but little over forty years since the first railroad was constructed in the United States, while we have now nearly eighty thousand miles, with an aggregate of investment of about four thousand five hundred million dollars, an amount which more than doubles our national debt, and with an annual gross receipt amounting to five hundred millions, and of net earnings of over one hundred and eighty-six millions, or more than twice the interest on our national debt; and moving the last year over two hundred millions of tons of freight. Of this eighty thousand miles of railway, more than one-half have been constructed within the last ten years, and thirty-seven thousand miles, or near one-half, are located within our favored Western States. In extent and cheapness of construction no other nation compares with ours. The cost of seventeen thousand miles of railway in Great Britian is but one-third less than our eighty thousand miles; the nominal cost of ours, (which is much above the real cash cost,) being about sixty thousand dollars per mile, to one hundred and eighty-nine thousand for those of Great Britian.

Nor have these works been unremunerative to their originators. Like all investments some have been largely successful, even on wasteful construction and worse management, while some have proved less so, or valueless.

Owing to the lack of statistics, it is impossible to arrive at very accurate returns, but I question whether as a whole, any of our large interests during good times paid better, and our best authorities place the net income during the last year of unusual ruin and prostration of business, on all the railroads of the United States, at an average of three per cent. And when we consider the sacrifices made on securities sold, the wasteful and even corrupt expenditures in construction and management, the large amount of fictitious stock divided without cost, and the extensive process of watering stock, I do not think it an exaggeration to place the income on money actually invested so high as at least six per cent.; a better interest than agriculture or manufactures have paid, as a whole, during the same period. Now, if so great an advance has been made under such circumstances in the past, what may we not expect from our present stand-point, in the future. For myself, I believe so far as a less cost of movement of production is concerned, we are yet to have a great change for the better; we are still in the infancy of the work. The true principles of transportation are yet but

partially understood and still less acted upon. They are now engaging and will continue with increasing power to engage the best energies of our best minds, in their solution.

To the producer, this is of the greatest moment. Every reduction adds to the value of land and the result of labor, and enables products to be removed to markets hitherto inaccessible. Every such reduction renders more abundant and cheaper the necessities of life, alike to the rich and to the poor. A few years ago and the millions of bushels of cereals, tons of meats, and dairy products of this great valley, now supplying cheap food for vast populations in both hemispheres, could not have been sent to them. And to-day the same may be said in regard to a large share of our vast product of Indian corn, though so cheap as not unfrequently to be used for fuel, and which if we could find a cheaper proscess of marketing, could be increased almost indefinitely. What then is to be done in this direction? How can we promote this great interest? What do we need? What difficulties are there in our way? These are questions of the greatest moment but to which time will only permit a hasty glance. What do our pruducers need which they can in justice ask for? I answer: First they need more regular and fixed rates of transportation. Without this the producer is in a sea of uncertainty—ever in doubt in what to engage his labor and capital. At the rates of to-day, he has a fair margin of profit, but what of to-morrow? An arbitrary advance when he is ready to ship or sell, may result in a prohibition or a loss.

You have no doubt all had or seen an experience like this. The evil bears with equal force upon middle-men, who are obliged to protect themselves from this risk by paying reduced prices; or in case of loss, seek to recover it in the future, and thus sooner or later to obtain it from the producer, who must pay for all these extra hazards or losses. So that if he gains this year, it is but to lose it the next.

There are no doubt, points, where owing to water competition or other causes, it would be difficult to secure always fixed reasonable rates, but not so in most cases. Most of these rapid fluctuations are the result of the arbitrary will of a few or the incompetency and reckless management of men seeking purely selfish ends, depressing to-day in order to monopolize and extort to morrow.

Second, again the producer needs, and should have, more equal rates in proportion to distance. It is most natural that a man should feel aggrieved and complain of unjust discriminations at being charged fifty dollars per car, while at a more remote point but thirty or forty dollars is

charged; or that he should be obliged to drive his stock or move his freight for miles to a station of low rates, when it could be just as easily taken at a nearer one, and it is not easy to convince him that there should not be found some remedy. We all know how frequently through-freights are taken in preference to local, and often at unremunerative rates, for which loss the local business is made to compensate.

Third, and most important: Producers ask such rates as shall give a *just return* on a *fair amount* of capital, *fairly invested and fairly and economically managed.*

As a general principle of justice, I think no one will deny the correctness of this position, either as applied to individuals, corporations, or the public. It is the principal of a fair exchange; a *mutual benefit* at a fair *mutual cost.* And if there are legal or technical difficulties at present intervening to prevent its application, the equitable claim is still good; and I believe the legal maxim that every wrong has its remedy, will eventually hold true and apply to this case. Whenever we approach this subject we are reminded of *vested rights.* Rights imply corresponding duties and obligations. Corporate rights are given to the few, that the many, as well as themselves, may be benefitted thereby, and in due proportion—not to be used for oppression and injustice.

And while fully recognizing the immense value of these works to the country, their blessing to the world, while duly regardful of the large aggregate of wealth invested, of all the rights of individuals and of property, yet, as these works have been constructed for private gain, just as men engage their capital in agriculture, manufactures, or other pursuits, I see no special claim for consideration, or why we have not the same right to seek redress for wrongs through the press, public opinion, legislative action, and the law, as in other cases. And no one who understands the subject can claim that we are at the present time receiving, generally, rates according to the rule I have laid down. In the first place, the nominal cost or capital basis on which returns are claimed ,is generally far beyond the real one. This is the result of a variety of causes; sometimes of bad judgment in the lecation of roads, or ignorance and incompetency in their construction; sometimes to reckless extravagance, often to large sacrifices on securities from deficiency of proper real capital on which to base a credit, too often from corrupt rings and "credit mobiliers," speculating out of construction or management, dividing large quantities of stock, as profit, or for corrupt offices for which only imaginary services have been rendered; often again by the process of watering, when through prosperous times or too high rates,

dividends becoming large, instead of making a just reduction to the public in rates, the stock is doubled or largely increased, upon which dividends are demanded; and then if times change, business declines, and dividends are reduced, it is proclaimed that railroads are a bad investment and do not pay. Take for example a railroad with a nominal capital basis of sixty or eighty thousand dollars per mile, which could be constructed and equipped for half the sum in money fairly expended, is it right in *equity* that the public should be compelled *perpetually* to pay dividends on the larger sum? For instance, the New York Central Railroad is said to have had, through the watering process, a capital basis of more than twice its actual cost when Commodore Vanderbilt obtained possession of it, and all know how he added *eight millions* thereto from accumulated profits over dividends, which was an amount *legally* perhaps, but not justly extorted from the public; and now it is expected that dividends will be *perpetually* paid on such a basis. Though there may be no legal remedy, yet is there any justice in this? Our express companies are also drawing dividends to an enormous amount on a like false basis. Now is there *never* to be any remedy for such inequities? Are we *forever* to pay many millions on purely imaginary capital, merely because certain men were granted privileges based upon the principle of mutual and equal benefit? These are serious questions, demanding not wild passionate action, not action outside the law and in violation of just rights, but of calm, earnest discussion and consideration; not to be put down by the mere outcry of vested rights—which are rather clearly vested wrongs—if vested at all. They may be legal, but surely not based on any principle of reciprocal justice. But again I assume, not only that compensation should equitably be only upon a fair amount of capital, fairly invested, but that that capital should be fairly and economically managed.

What right has one corporation to ask the public to make good its losses arising from its own wrong, its incompetent or corrupt management, more than another, a railroad more than a manufacturing company, or an individual? Should not the loss justly fall upon the negligent stockholders? What would be thought of an individual or a bank that sought thus to recoup for such losses?

Now we all know how much more easy it is to criticise than to do better, to point out a wrong than to correct it, or even to show how it can be corrected. And here, when we attempt to show how these necessities of the public are to be secured and wrongs righted, we encounter these difficulties in their fullest force.

For years this railroad question has engaged the most careful attention

of the best minds of this country and Europe, not only in regard to the great economic question involved, but because of its relation to the government itself; and its probable bearing upon the future of the country. A few years ago, a joint commission of the British Parliament, composed of the ablest men of the kingdom, had the whole subject under most elaborate consideration for a long period of time; and strange as it may seem, about the only conclusion arrived at was that during their forty years of experience their railroad legislation had never accomplished anything which it sought to bring about; and had never prevented anything it sought to hinder. And a subsequent report comes to the alarming conclusion "That the time was soon coming when the question would have to be decided whether the government would possess the railroads, or the railroads possess the government." In our own country, we all know how commissions upon commissions have been raised by our different State Governments and reports made thereby, and though we have not accomplished apparently very much, yet I believe great good will be the result of all this thought and investigation, and that in the language of Charles Francis Adams, Jr., one of the railroad commissioners of Massachusetts, "the subject is rapidly being discussed down to certain principles and practical issues, which can be so formulated as to bear directly and successfully on this absorbing subject," and establish the true relation of these vast corporations to the government, and the public; so all shall act in harmony and as they were designed, for mutual good.

And here I ought to say that many of our ablest and best railroad managers are themselves keenly alive to this subject, moved by a sense of its importance, not only to their own real interests, but from a consciousness of the higher questions involved, and who I feel confident will, as correct principles of practical application are ascertained, aid in securing or at least assent to such legislation as shall restrain more selfish, reckless, or corrupt operators. I have such an abiding faith, not only in the intelligence of our countrymen, but in their moral sense, as to believe them capable of seeing and ready to sustain the right, so that wrong cannot permanently continue. It is often claimed that these subjects should be left entirely to competition to regulate, and that thence will come all needed reforms, but here again observation and experience prove the very reverse, and upon principle must continue to do so.

In order to secure safe competition in any business, capital must easily be placed in or removed therefrom, which can never be the case with railroads. There capital is fixed and permanent, and a competing line is sure either to be crushed or consolidated, and the public made to sustain the

loss. For a practical illustration of this we have but to recall the contest of the great Trunk Lines last year; for a time rates were for those lines and their allies, ruinously low, but it all ended in a stronger combination than ever, and one which from their sad experience is not likely soon to be broken.

Among the *favorable* agencies in active operation is the greater economy and reduced cost of transportation to the railroads themselves, arising from the many improvements constantly introduced, and especially in the use of steel rails, costing now little more than iron, and lasting at least three times as long, and further in banishing a great number of fast freight lines owned by outside parties and rings, in which too often managers have themselves been interested, and which have not only profited largely at the expense of the roads, but tended to a general demoralization.

Again, something is annually gained by judicial investigation and decision in settling principles, and by prudent legislation based thereon. Among the remedies yet to be applied are laws holding directors and officers to a much more stringent accountability—demanded alike for the good of stockholders and the public, and by the more rigid enforcement of existing laws requiring fuller reports to State authorities, and giving commissioners the fullest power of investigation; and when it is proven by the latest reports that rates have declined on an average through the country over twenty-five per cent. during the last seven years, surely we need not be hopeless of the future. But over and above all agencies and at the basis of this, as of all reforms in a popular government like our own, is a right public opinion formed by agitation, producing the fullest discussion, and all the power of the press brought to bear upon the questions involved. Reason and experience prove that with this, sooner or later, the right will triumph. This may cost in time and money, but as "eternal vigilance is the price" not only of liberty but of equal and just laws and their proper administration, so he who is unwilling to pay such a price, fails in his duty and should not expect the rights of an American citizen or the enjoyment of the priceless blessing of a government which, with all its faults, is the best the sun in its centuries of light has ever shown upon.

Had time permitted I had intended to have spoken upon the advances being made in the construction of narrow-guage railroads, with their greatly reduced cost of construction and economy of operation, from which many well advised persons are sanguine of most favorable results, and also of the great work going on at the mouth of the Mississippi, under Captain James B. Eads, and its probable results upon the Northwest as a most efficient source of competition in cheapening transportation for all that section.

At the close of GEN. PARSONS' address, DR. JOHN M. GREGORY entertained the audience for about one hour and a half. Below we give the substance of his lecture, which was well received by the audience.

DR. JOHN M. GREGORY'S ADDRESS IN BRIEF.

In referring to the hard times, he said that they existed not only in this country but in others, and the best political economists claimed that it was of longer duration than ever before known. A noted Englishman gave the cause of hard times as being over-expending and over-consuming. From this he proceeded to argue that over-consumption was indeed the cause of hard times; that while the net production of the country was about $500,000,000, of that sum about $3.50 was saved out of each $100. We spent from $8,000,000 to $10,000,000, and burned it in gun-powder; states, counties, towns and school districts plunged into debt. In Southern Illinois the farms were heavily mortgaged, and the owners had to send the interest annually to New England. Much was said about the credit system, but man could not live without credit; if he did not buy things on credit he expected that cheese and corn would command the same price next week as they did this. Germany was having the worst of the financial crisis, although she had free trade and French money, yet some of her citizens jocosely remarked that they wanted to go to war and be compelled to pay a heavy indemnity, thereby hoping that when they came out of the war they would be as well off as France. There is little or no revival in manufactures in this county. The improvements made in the past one hundred and fifty years, such as railroads, steamboats, cotton-gins, power looms, the telegraph, both on land and sea, the various countries transmit letters of credit from one to another, received a passing notice from him, to show the progress made by man. There is no limit to the power of machinery that is being made. The work of the millions has passed into the hands of the few, and they are not done yet; by and by, perhaps one machine will be invented which will superintend all other machines. The time is not far distant when the sunshine will be used for heating our houses and driving our engines, and some say that the sunshine in fair weather will be gathered up for use in the stormy, cloudy weather.

The Convention now adjourned to meet at the Court House to-morrow, at 9 a. m.

THURSDAY, 9 A. M.

After calling the Convention to order the President announced that he had received an invitation from the proprietors of the Illinois Condensing Company, for all the members of the Convention who wished to visit their works in this city.

On motion the Convention adjourned for one hour to accept this invitation and visit the works.

Upon the re-assembling of the members again, the discussions were resumed, and Topic 8, "Grasses, the best varieties for hay and pasture, as adapted to our climate," was called for, when THOMAS MILSOM, of Flora, Illinois, furnished the following paper:

THOMAS MILSOM'S ADDRESS.

MR. PRESIDENT, GENTLEMEN OF THE CONVENTION: I cannot see for what reason the parties who made this programme selected me to open the discussion on this important subject: "Grasses, the best varieties for hay and pasture, as adapted to our climate." I am certain there are men in this room, some of whom are to follow me, that have had far more experience and know a great deal more about it than I do.

I have for some time paid a good deal of attention to grass, for in a country like Southern Illinois, where our soils are thin, in places very flat, and again in others very subject to wash, and where we have raised nothing but corn for the last—well ever since the prairie sod was first turned under; grass is our only salvation; but what varieties I do not think I have thoroughly solved.

Red Top ranks among one of the foremost grasses of Southern Illinois; perhaps on account of its adaptability to our wet flat lands, or because the seed is always in good demand. (We have shipped from the town of Flora, alone, this summer, over fifty thousand bushels of Red Top

seed, and the hay from which this seed has been taken can be bought to-day for one dollar or one dollar and a half per ton.)

The majority of our farmers seem to have a prejudice against any other grass than Red Top, and say our soils are not adapted to the growth of any other variety. It is true Red Top is a good variety for our climate on account of its rooting deeper, standing drouth better, and is less subject to the army worm than any other grass, Clover perhaps excepted; but when we want good hay, quantity is not to be allowed to altogether supercede the quality of the material needed.

Timothy, or perhaps Timothy and Clover, are our best varieties for hay, but the question is, can we raise them? No one doubts but what Southern Illinois is one of the best wheat-producing sections of our State, and where good wheat can be raised, Clover can. We have only one objection to Timothy, and that is it takes more alkili than any other grass, and our soils have less of this to spare than any other ingredient.

The great objection to Timothy seems to be, with the most of farmers, the trouble of getting a stand. Now we have never known a farmer who has thoroughly cultivated his land but what has got a good stand the first year. Our farmers are to apt to blame the climate and soils when they themselves are to blame. If a piece of land is dirty it should never be put in grass; my experience has been, that if a field is wanted in grass and it is dirty, it is the best policy to summer fallow it, get it in good condition and sow your seed in the fall; I have never seen it fail. Then the best grasses for hay are Timothy and Clover, first, because they are adapted to our climate and soils; second, because they yield as well as any other grass; third, because stock prefer it to any other hay; and lastly because they contain more nutriment than any other grasses.

We might speak of "orchard" grass here as a variety for hay, and would recommend its cultivation to those who believe in it, for it is certainly adapted to our climate—in fact we think it will grow anywhere, but after it is grown, what are you going to do with it. Prairie hay can be bought for less money than orchard grass can be raised for, and it is certainly as good, orchard grass being only ten per cent better than the sage grass grown in the South.

A word in regard to Clover—our best clover lands are our low, flat, craw-fish prairie lands, where one would think nothing would grow; some of our farmers seem to have the idea that clover will only grow on "hazel land" or the hill-sides of timber land, While they on this kind of land raise large crops the first and perhaps the second year, (if the winter is not

too severe,) yet it will sooner or later, freeze out; when in the low, flat lands it will stand for from eight to ten years. Have seen two and one-half tons per acre cut off this kind of land.

As to what grass we should use for pasture I do not think any one grass alone is good. We should mix them, and the more varieties the better, as long as you leave orchard grass out. Red Top, Clover, Timothy, and Blue Grass, make in our region a splendid pasture, although in time the Timothy will disappear.

Our county though, as a general thing, is not adapted to the growth of Blue Grass, for the reason that our soils do not contain enough lime, but we have no doubt as the country gets older, and artificial fertilizers are more used, our soils will become more adapted to the growth of this best of all pasture grasses. But before we can succeed in the cultivation of grasses, we must first put our land in shape to receive the seed, and this can only be done by thorough cultivation; plow deep, pulverize well, and thoroughly drain your land, and then whatever grass is best adapted for the purposes for which it is needed, is the grass to raise.

We might speak of grass as a manure, but will only say land should never be allowed to remain idle without being seeded down in some kind of grass. There is no way in my judgment that land can be so cheaply improved as by turning under a good stiff sod. This will be very apparent when we consider that the sod (Red Top,) on an acre of land, to the depth of four inches, will make four hundred cords of sod, which being made into compost, is equal to one hundred loads of barnyard manure.

H. W. MEAD was not a speaker. What little he knew about grasses, he had learned from experience. He used mostly Timothy and Clover. Red Top done well, but would run out all other varieties. Blue grass was good, so was June grass, to mix; Red Top, Foul Meadow, and Blue Grass, were about as good as any he had tried; it made a good, fair root, did not easily kill out, would remain as long as any variety he knew of.

MR. SHERMAN asked as to how he mixed Timothy and Clover, when seeding.

MR. MEAD: I use three to six pounds of Timothy to one peck of Clover.

E. H. SEWARD: Had had some experience with grasses. Liked the plan of MR. MEAD; to mix a variety of seeds was good, for all varieties do not ripen at the same time; this plan would come nearer to always having good fresh pastures than any other plan he knew of, for as one variety would ripen and become dry, another might be green and fresh. Also White and Red Clover were good; Red Clover was a biennial, and died out every two years, but when sown on good land would yield a large crop; but was best when mixed with Timothy. He once fed his cows all Clover, when he found they gained two or three pounds per cow; it should not be allowed to grow coarse and large; it should be sown thick, so that the stalks will be fine.

I. BOIES thought no hay ever fed a cow would equal clover; it was worth one dollar per ton more than any other hay, but as to pasture he would not say a word in its favor. All kinds were good mixed, but the more Blue Grass and White Clover the better.

B. COX: Does it not take great care and trouble to cure red clover?

I. BOIES: It takes a great deal of faith to cure clover, both in the weather and all that pertains to it. It should not be exposed much to the weather, and should be made in small cocks, and thus let it cure in the field.

L. BARTLETT: How long does it take to cure so that it is fit to put in barn or stock.

I. BOIES: Said he followed close to the mower; it took but little more time than Timothy and Clover.

S. K. WILLIAMS: What do you do in case of long rains while in cock?

BOIES: Let it remain. Do not stir or expose it to the

air. Would always raise clover; could not run a dairy without it. The bunches, when dry, should not weigh over fifty or seventy-five pounds.

H. W. MEAD: How is orchard grass for hay? Or is it only adapted for pasture?

BOIES: Had tried it for hay, but could not succeed in getting a good stand; it easily killed out.

MEAD: Had also experienced the same difficulty.

M. H. THOMPSON inquired if anyone had experimented with Alfalfa?

MR. WATTLES, of McHenry, had found it good for low land, but not well adapted for high rolling lands.

MEAD: Had also tried Alfalfa, but did not succeed; land might not have been right.

BOIES: Had also tried Alsac, but with no success.

MR. PERRY said it must be sown on dry land; had seen it at Champaign; it was not a success, but he thought that on dry land it would do better.

WM. FRAZIER: Had also tried Alsac, but with no success.

BOIES said he did not sow white clover; it was natural to our soils and would creep into any meadow if it had a chance.

Topic No. 9, "Is it profitable to keep more cows than the farm will sustain," was now called for.

I. BOIES said he had always argued to keep more cows; he looked at it a little differently now; now he would say keep more cows on less land. E. W. STEWART of Cata-

raugus Co., N. Y., kept thirty cows on one hundred acres of land for seven years, as pasture; then he mowed his land and fed his cows, when he found that he made eight hundred dollars per year more when he fed than when he pastured; thought the same number of cows could be made to yield double when fed, therefore he now argued to keep less land and more cows.

THOMAS BISHOP: If a cow gives five gallons per day on grass, will she give ten if fed on hay? He had found that cows coming in in September done much better than cows which come in in April; i. e., for the year. Kept a few cows and kept them well; could get more from a few well-kept cows than from many more poorly cared for.

JOHN R. MCLEAN expected that those who preceded him would exhaust the subject, but found they had left a good deal for him to say. Was a small dairymen but a very early one; i. e., he began a great many years ago; he kept eighteen cows on his one hundred acres of land; raised a little of everything; rye, corn, oats, potatoes, etc. Was ready for reverses. Wanted to come out square each year. Kept the farm to "fall back on." Thought it the safest way to keep no more cows than the farm would support; could keep twenty-five just as well as eighteen; had plenty to keep them on; kept six horses; had no use for them only to pay taxes on; thought every dairyman should raise his calves, or at least enough each year to keep up his dairy. Raised six hundred bushels of oats. Could sell his straw for four dollars per load. His farm was now rented, and he could not tell exactly what was done.

I. BOIES: How did you find the market when you first began?

MC LEAN: I received ten cents the first year, per gallon; the next year five and one-half cents; in 1861 five and three-fourths cents; in 1862 six cents per gallon; in the fall

of 1863 he got twenty-three cents per gallon, and all other things were in proportion. Had sold good butter for seven cents per pound when it took seven pounds of butter to buy one yard of cotton cloth; prices had ranged from five and one-half to twenty-three cents.

The Committee on Nominations made the following report:

To the Illinois State Dairymen's Association:

We, the undersigned, Committee on Nominations, submit the following. We recommend that the old officers who served last year, be re-elected for the ensuing year.

On motion the report was received and adopted and the Secretary instructed to cast the entire vote of the convention in favor of the same. Whereupon the vote was taken, when the Secretary cast the vote as instructed, except for the Secretary, wherein he declined to vote for himself.

On motion the chairman of committee was instructed to cast entire vote for Secretary, which was done, and the vote declared unanimous.

County Trustees were then appointed, as follows:

Kane County—G. P. Lord, J. R. Mc Lean, C. H. Larkin.
Cook County—Hon. John Wentworth, Dr. Kennicott, A. H. Dalton.
Ogle County—J. Davis, T. H. Baker, A. J. Negers.
McHenry County—L. W. Sheldon, R. M. Patrick, H. M. Thome.
DeKalb County—Hon. William Patten, R. Ellwood, T. H. St. Johns.
Knox County—A. J. Miller, Gleason Breed, C. J. Ferris.
Clay County—Gen. L. B. Parsons, Thomas Milsom, B. B. Ingraham.
Du Page County—Ira Albro, Peter Pratt, A. S. Barnard.
Stephenson County—John Smallwood, S. F. Henderson, John Swezna.
Boone County—L. W. Lawrence, B. Cornwell, T. E. Munn.

On motion adjourned to meet at 1:30 p. m.

THURSDAY, 1:30 P. M.

Convention called to order as per adjournment. On motion it was voted to take up Topic No. 15, "The best feed, quality and quantity, at the different seasons of the year, for cows from which butter is the chief product desired."

PROF. F. H. HALL said this was an interesting question, as most of our common foods are either fat or flesh formers. Had made some experiments this year. It requires two pounds of flesh and six pounds of fat formers to sustain life; we must then feed beyond this point to get either growth or profit. Red Clover is a flesh former and is as three to seven as a fat former; it was nearly as one to two; he could not get exactly the right proportion; changed his feed to oats and corn meal; was off two pounds per day in yield. In winter a cow will eat as two to ten of flesh and fat formers; Timothy hay has just about these proportions, but cows could not eat and digest enough hay to produce what we desire.

Clover hay has an excess of flesh former; so has bran; and should not be fed together. Oil meal is a great flesh former; corn meal is as sixteen to twenty-eight; corn fodder is rich just as corn is; clover and corn fodder go hand in hand; cows will often crave for oat straw, because it is a fat former and should be fed with clover; could tell just how much must be added to oat straw to make it just as good as Timothy hay. Had experimented as to sweet corn; his milk grew poorer and poorer; stopped the corn fodder and all was right again; kept the Jerseys; liked them best.

D. C. SCOFIELD wanted to know if any experiments

were being made at the Industrial School at Champaign, in dairying ?

He learned there were none, whereupon he offered the following resolution, which was adopted:

"Resolved, that the Illinois State Dairymen's Association appeal to the Illinois Industrial University that they take up experiments relating to economy in feeding and kindred subjects connected with dairying."

THOMAS BISHOP said if corn fodder is of no use he was glad to learn it, for some of his neighbors often cut up twenty acres; now if we are losing all this labor, let us quit it.

JNO. PERIAM, of the "Prairie Farmer," said that to make experiments which would be of real value to the dairymen of Illinois, would cost a great deal of money; there should be three stations, one north, one central and one south; these would cost twenty thousand dollars each, which during these depressed times, would look like a large sum for those engaged in other pursuits, who were taxed equally with us to keep them up. He thought the Industrial University would make experiments as soon as they were able; in fact, they were commencing now; he thought the school was coming every year nearer and nearer what we would like to have it. We could have much to do with shaping its course, if we saw fit.

Topic No. 13 was again taken up, when S. K. WILLIAMS read the following paper:

S. K. WILLIAMS' ADDRESS.

"What is the best and most economical method of handling milk to make butter ?"

MR. PRESIDENT AND GENTLEMEN OF THE CONVENTION: I do not propose to describe in detail the *modus operandi* of making butter, but

state a few facts. Good butter cannot be made from impure milk, consequently good pure feed and pure water in abundance must be furnished the cow. It is not wise in summer or winter to permit cows to drink from sloughs or stagnant water, but be furnished water from running streams or from the pump, or to wade in filth and mud to their necks to get to the pasture or through the pasture. Nor is it wise in winter to permit cows to wade about in yards full of water, mud, or manure, or to stand in stables wet or muddy or with broken floors, or in anywise unsightly, or unclean, or offensive to the most delicate smell.

Odors of all kinds, either animal or vegetable, must be excluded, and cows carrying their afterbirth should not remain in the flock.

Cleanly Milking: After the feed and water has been attended to, and the stables properly lighted, ventilated and made warm in winter, the next important duty is cleanly milking. Yes, cleanly milking! I cannot give you the one hundredth part of the uncleanly practices of milkers, being for the most, persons who have no interest in the matter except to dash from cow to cow and get through the job as soon as possible.

Yesterday after arriving in this city I visited the inspector of milk at the Condensing Factory, and asked him, shall I, in this convention, describe the dirty practices of milkers? Yes, Yes, he says, by all means, and when you have told all you can, the one-half is not told.

Milking, How Done: Forty cows are to be milked; they have come from the pasture, in the spring, into the yards, after wading through deep mud holes in the pasture, and the yard has not been cleaned of manure for a year or more and they still wade into the stables with udders, sides, flanks and bellys in the condition you would say they must be; four milkers commence; the cows need washing and careful cleaning; do they get it? No! The first man commences and finds his hands at once full of muck; he throws it away—what does not go into the pail, and still goes on washing the cows teats with milk, taking care that all does not get safely into the pail. Number two, the next milker, finds his cow not so bad, and he goes on, taking no care to clean his cow of hanging dirt or lumps of manure, and he too, is soon dashing away with thumb and finger, dipping them in the milk every alternate stream, and when he is done with that cow, she is in the condition she should have been in when he commenced. Number three is milking a restless cow, and pail one-half full of milk, she raises her foot, puts it into the pail and forces it to the floor; the milk is not spilled; the foot is removed and big lumps of manure skimmed out with dirty fingers; milking resumed and milk emptied through the strainer in the can

and sent to the factory. Number four, the boss, and maybe the owner of the place, is milking a gargety cow, and milk thick or watery, or a cow that has calved but twenty-four hours and it will not do to have all this milk fed to the hogs, and so it is sent to the factory, saying, "I am no worse than my neighbors." If such is the summer management of cows, what is the winter treatment when the cows are for the most part fastened in dirty stables? You may answer. These practices so far are neither wise or economical, and yet we expect and compell our butter and cheese makers under these circumstances to warrant their work or goods. I will digress a little and assert that the grand reason why our butter and cheese breaks down so soon after being made is fermentation, caused by improper handling the milk before it reaches the milk room or factory.

Another difficulty in the way of making fine butter is the faulty construction or location of the butter room or factory.

No vegetable cellar, or cellar of any kind or room adjoining a cooking apartment, should ever be used for handling milk. Neither should the factory be so constructed that the sewers or any thing around the building will become a pest hole, producing a stink that will sicken a passing horse. Neither should the well under the building be so arranged as to become a receptacle for the drippings from the floor of the making-up room, or be left uncovered to form a rat-trap to rid the place of this nuisance.

The best method of handling milk to make butter is to employ thorough bred men to produce the milk, men not afraid to use their muscles as well as brains, men who can milk a cow or harness a horse as well as drive him, or if need be, become a dining room servant in the cow barn. This kind of thorough bred men who are willing to attend to the details of butter making and farming in general are the men who are to place our butter and cheese on a par with the best in any market.

"*Manner of setting milk.*" On this point there are perhaps more theories and more practices than upon any other part of the work.

First, We have the small pan system with it advantages and advocates.

Second, The large pan system with its various attachments.

Third, Deep setters or pails used mostly in water.

Fourth, The air duck (sub earth) system, in which the cool air is the great motive power to cool or warm and regulate the whole thing. And

Fifth, The submerged system, where air is excluded and milk sealed up tight, and besides, there are many other theories and practices, all of

which, no doubt, in the hands of an expert would be a success, while any one and everyone of these systems would be a grand failure in the hands of a careless, lazy man.

Pure, unadulterated milk removed from the stable soon as drawn from the cow, and its temperature at once reduced to 60° and held until matured at from 58 to 60° in a room expressly for raising cream, and for nothing else, will always eventuate fine butter, other details being properly attended to. I now offer the following resolution, viz.:

Resolved, That this Association does hereby express its emphatic disapproval of the various uncleanly practices so prevalent in handling milk where produced, and do strongly recommend to each public factory the appointment of an inspector, whose duty it shall be to ascertain from time to time, by personal inspection, whether each patron of the factory is handling his milk so as to preserve its original purity.

A member asked as to the proper degree of temperature for cooling, for butter.

ISRAEL BOIES had tried different degrees of cooling; had found about 65° to be about right; 55° is not as good; if we get below 65° we injure the butter qualities; for private dairies no cooling at all is best.

The committee appointed to offer suitable resolutions in memory of members who had died since our last meeting, reported as follows:

WHEREAS, this Association has learned with deep regret of the death of ROBT. W. STEWART, of Hebron, Ills., one of the earnest members of this Association, and a successful dairyman, and also of the death of H. L. FORD, of Geneva, Ills., also a member of this Association. Therefore, be it

RESOLVED, that we tender to the families of the deceased our heartfelt sympathies in this their affliction, and that the same be printed in the proceedings of this convention and copies sent to the families.

The above was unanimously adopted.

H. C. MEAD, McHenry, said that the private dairies in his locality could always command a good price for their butter; people come for many miles to buy their butter of private dairies, rather than patronize creameries; in fact, the private made butter is the best. He used the Cooley plan and there is no doubt but what it is the most cleanly. He well remembered when the early settlers used the corner of a rail fence for a cheese press, with stones on the end of a lever for weights; all had changed now; the old shallow pans had given way for the deep setters; the cream would all rise, no matter how deep the setter; was lighter than milk and would find its way to the top. Did not have any of the kind of factories which MR. WILLIAMS had been talking about; had plenty of water and kept their factories clean and neat; if our factories have no spring, wind-mills are used; his plan now, was to submerge in cold water for twelve hours, at which time he could entirely separate the butter particles; temperature at 48°; the separation was plain to the eye; then drew off his milk from beneath, which was the best plan. His neighbor, MR. WATTLES, used a patent cooler; sold his butter as high as any factory; churned only the cream; milk did not sour at this degree of cold; thought that every dairyman should manufacture his own butter, and save the five cents we are now compelled to pay.

H. W. MEAD inquired what it would cost per pound to manufacture for a dairy of forty cows ?

H. C. MEAD: Did not know exactly; thought two and one-half cents; he had taken to a factory; could churn in the same time he was going to factory.

WILCOX inquired as to the sediment which would settle in the cooler ?

H. C. MEAD said one pint left in the bottom would dispose of it all, and not mix with the cream.

H. W. MEAD: This price looks very low; had made cheese for thirty-five years, and had sold for four cents per pound and done well; he now run two factories; made butter and cheese, but this price seemed very low.

PROF. HALL: Had also used the Cooley cooler; could get all the cream in ten hours. Could not say as to the keeping qualities; iced butter would not keep; he made four trials, but the result was not entirely satisfactory; his apparatus was not exactly perfect; one such experiment will not do; as the temperature of water, coloring matter or some little thing might not be exactly right; could, by forcing, get all the cream in eight hours. Had also tried Hardin's plan; needs no air; also stops decay; Hardin's is a refrigerator at 50°, when warm; also tried airing the milk; could see no difference; set some in the dark and some in the light; could see no difference.

MR. WATTLES said: As to the Cooley plan; after he got his apparatus running, his wife had nothing to do; no pans to wash, or churns to scald, or milk to skim; he had rather churn than take his milk to the factory; once cooled the labor is done.

A member called for MR. BOIES' plan of cooling:

MR. BOIES said he cooled by an air duct; air at 52° to 63°; tried to hold as nearly at 60° as possible; in wet weather it took two or three pounds more milk to make a pound of butter than in dry weather; no one plan would do for all places; manipulations must be changed according to circumstances.

The Secretary of the Elgin Board of Trade, read the following, as the transactions of the Board from December 12th, 1876, to December 11th, 1877:

Pounds of cheese sold	6,636,386
Boxes of cheese sold	157,421
Pounds of butter sold	1,174,388
Total in dollars and cents	$1,059,085.05

The highest price paid for cheese during this period was thirteen cents; the lowest price was seven cents. The highest price paid for butter was thirty-six cents, and the lowest was twenty-two cents. The average daily sales for the forty-two weeks, was $29,975. The above figures, of course, do not include the amounts sold at private sales in this vicinity, which would nearly if not quite double these figures.

The question here came up as to whether the Secretary of the Association ought to be paid for his services or not; when, after some discussion, it was voted unanimously that for the ensuing year, that the Secretary be paid fifty dollars for his services.

On motion the Association now adjourned to meet in this city on the second Tuesday in December, 1878.

Upon the subject of "Compensation for making Butter and Cheese," I. H. Wanzer furnished the following paper, which was received too late to come under its appropriate head:

PAPER FROM MR. I. H. WANZER.

"How much per pound is a fair compensation for making cheese, including necessary furnishings and boxes; also how much additional for marketing?"

Are questions proper to be asked in this place, as they will have a tendency to settle the differences of opinion that have existed between the producers of milk and the manufacturers of cheese.

We are sorry that the question of how much it costs to produce a gallon of milk and market it, is not included in your programme. But we presume that not one farmer in ten could answer the question, and there are too many manufacturers of cheese that plod on year after year without

knowing how much it costs to make a pound of cheese. In giving its cost from our standpoint we shall differ somewhat from others who operate in different locations where fuel, salt, labor, &c., may be higher or lower. Our estimate will be upon one hundred pounds, made in a factory with an average capacity of five hundred pounds daily.

Labor for making one hundred pounds of Cheese	60	Cents.
Salt " " " "	4	"
Rennet " " " "	5	"
Annotto " " " "	2	"
Bandage " " " "	6½	"
Grease and scaleboard " "	4	"
Boxes for one hundred pounds of cheese	35	"
Fuel for making one hundred pounds of cheese	12	"
Interest, wear and tear on cost of factory	16	"
To guarantee goods that may be poor from unavoid'ble cause	10	"
Delivery to depot	4	"
Cost of marketing, collecting and disbursing	50	"
Insurance on building and contents	5	"
Total	$2.13½	

In this estimate there is nothing but the actual cost set down. Should the manufacturer get $2.50 per one hundred pounds, which we believe to be the prevailing price, he has a margin of thirty-six and a half cents, which would amount to $1.82½ per day, or $666.12½ per year.

There are some things in connection with the establishment of factorys for the manufacture of cheese that are usually over looked, which we will mention as justifying the manufacturer in demanding this profit and even more.

First, we mention the precariousness of his investment. He is completely in the hands of the milk producers, his buildings and fixtures are good for nothing without milk. Should war or any other unforseen thing occur that would make grain, beef or sheep raising more profitable, the farmer will turn his attention to that, and the factorymen's investment is gone. Should a railroad pass through the neighborhood, creating (as it has in three or four instances in our own neighborhood,) a more central place for a factory the old one must go down. In many instances competing factorys are built, encouraged by the farmer, that they may get a place nearer by, where they may take their milk, thus cutting off the supply of milk and reducing the old factory so low that his profits are all gone. This was the case with the Sherwin and Webster factory ; it was the same with factory "A" and factory "B," also the Switzer factory, all within five mil es of this city. And we think could safely say of the thirty-six factorys that are within ten miles of this city that not more than one-half are paying institutions. And, to speak of the men that have been first and foremost in

this business from its first introduction in the west, we don't believe that one out of ten are as well off to-day as they would have been had they have stuck to the business they had left. Too many small factorys are being put up, they can't pay. A factory, in a great measure, is like a hotel, it takes a certain number of guests to pay expenses, and when they get beyond that they make some money. So with a cheese factory. It costs no more to keep five hundred cheese warm than it does one. It costs but ten per cent. more for help to make one thousand pounds of cheese per day than it does five hundred pounds. The factorymen can dispose of, collect for, and disburse, the money for one thousand pounds of cheese per day with the same time and trouble that it would take to dispose of five hundred pounds.

MILK SUPPLY OF FOX RIVER VALLEY.

We are indebted to the Chicago Journal for the following article upon this subject:

The Agricultural department of the general Government should possess and annually publish actual data of this rapidly increasing branch of our national production, but it is mainly left to the detached fragments of news that creep into the press, which are collated by some industrious lover of statistics, and so an approximate statement is finally reached. The constantly increasing demand for improved products of the dairy has stimulated endeavor to its utmost, until American butter and cheese, like American wheat, corn and beef, have become staple articles of export, and European markets are supplied from our Western prairies as well as from the glades of New York. It is not the purpose of this article to give even a good synopsis of the products of the dairy farms in the West. Such a work would require a greater expenditure of time than the writer has at command, but having in possession a few figures, thought it might prove interesting to many of your readers to peruse them.

The item of milk for daily consumption in a city like Chicago is something enormous. This supply must come from the rural districts, and within a limited range, as it is not found desirable to transport the fluid too great a distance. Coming pure from the farms, it might become butter if indulged with too long a ride. The great bulk of the supply for Chicago

comes from Cook, DuPage, Kane and McHenry counties, the famous Fox River valley furnishing three-fourths. Throughout these counties are hundreds of splendid farms entirely devoted to dairying, and the milk is either shipped to Chicago per rail or sold to the numerous factories where it is manufactured into butter and cheese.

The milk is brought to Chicago in cans holding an average of eight gallons each, strongly made, the can and contents weighing about eighty pounds.

The milk being thoroughly cooled before it it is placed in the cans, but little of it is injured in transit.

Below is presented the figures of shipments from various towns to Chicage upon three of our railroad lines.

The Chicago & Northwestern railroad is the largest shipper, as its lines run through the heart of the milk district. Mr. Schenck, the freight auditor, kindly furnished the shipments from each station upon his line for the past five years, and the aggregate presented is enormous, showing each year a constant and regular increase.

WISCONSIN DIVISION.

Towns.	Gallons, 1877.	Total in five years.
Arlington Heights	280,740	1,380,518
Barrington	373,040	1,895,596
Canfield	23,680	135,624
Cary	74,640	407,088
Crystal Lake	47,280	229,120
County Line	9,228	52,712
Desplaines	233,400	1,631,040
Park Ridge		232
Palatine	88,988	520,684
Plank Road	8,000	26,196
Ridgefield	150,496	643,640
Woodstock	65,512	354,120

GALENA DIVISION.

Towns.	Gallons, 1877.	Total in five years.
Algonquin	444,000	2,301,920
Blackberry	86,000	294,240
Clintonville	21,960	182,833
Creston		408
Dundee	989,760	4,983,376
Elgin	21,056	206,536
Elmhurst	52,400	380,000
Geneva		7,848
Gilberts	486,640	2,543,332
Huntley	150,800	586,656
Junction		26,616
Kishwaukee	12,080	17,520
La Fox	74,560	211,568
Lodi		1,920
Lombard	70,688	401,104
Maywood	28,400	93,352
Wheaton	10,800	40,728
Winfield	19,576	109,528
Wayne	98,800	760.100
Total	3,987,324	20,698,094

A reference to the above table will show that Dundee and Algonquin have in five years furnished nearly one-third of the milk to Chicago by the Chicago & Northwestern railroad, and why the milk from those towns should be distributed under the title of "Elgin Dairy," is one of the mysteries. Elgin ships but little milk, most of the product of that locality being required by the Condensing Company and the several butter and cheese factories. The scheme is a cheap steal upon communities which deserve credit and are entitled to it.

Mr. Henry Starring, general baggage agent of the Chicago & Burlington railroad furnishes the following table of receipts of milk upon that route for the year 1877:

Towns.	Gallons.
Bristol	912
Downer's Grove	34,792
Fox Station	8,344
Hinsdale	47,872
Lacton	87,968
Lisle	257,560
Montgomery	16,941
Naperville	98,736
Oswego	5,904
Riverside	38,424
West Lyons	169,560
Western Springs	47,672
Yorkville	10,552
Total	825,240

Mr. George H. Daniels, general passenger agent of the Chicago & Pacific railroad, reports that road as bringing to Chicago in the year 1877 the following amounts:

Towns.	Gallons.
Bensenville	280,432
Bartlett	100,152
Dumser	86,200
Elgin	432
Hampshire	103,600
Hammonds	200
Itasca	17,200
Manheim	67,600
Meacham	59,336
Ontarioville	128,800
Pingree Grove	123,904
Roselle	63,344
Spaulding	88,872
Salt Creek	22,840
Starks	61,080
Total	1,204,312

The cooling beverage known as buttermilk "came to town" upon that road to an extent of 45,120 gallons.

This represents the shipments, upon the three leading roads, of milk to

the city during the year. Of course, much more is received upon various roads, but the writer has not the figures at command.

Throughout the country from whence the above supplies are drawn are located numerous cheese factories, which receive and work up a still greater amount of lacteal fluid. Twenty-five years ago this trade was unknown to the West. With the present ratio, what will it become in another quarter of a century?

In conclusion, we present a few figures and detached statements, such as were readily attainable, in reference to the milk business of the Fox river valley.

The Illinois Condensing Factory, located in Elgin and managed by Lee Borden, Esq., last year used 1,045,705 gallons of milk, giving employment to seventy-two persons, and paying out a great deal of money to the farmers. The works are on a grand scale, and a source of regular profit. Fourteen thousand cans are made in the building each day and filled with condensed milk and *sold.*

Many factorymen are diffident about furnishing data, or it would have been a pleasure to have presented a valuable table of the dairy products of the above named four counties for the year 1877. It represents a vast capital, untiring industry and skill. The dairymen as a class are becoming wealthy, and richly deserve the rewards they receive, as you will scarcely find in the country an equal number of as capable, intelligent and keen business men as in the dairy district of Illinois.

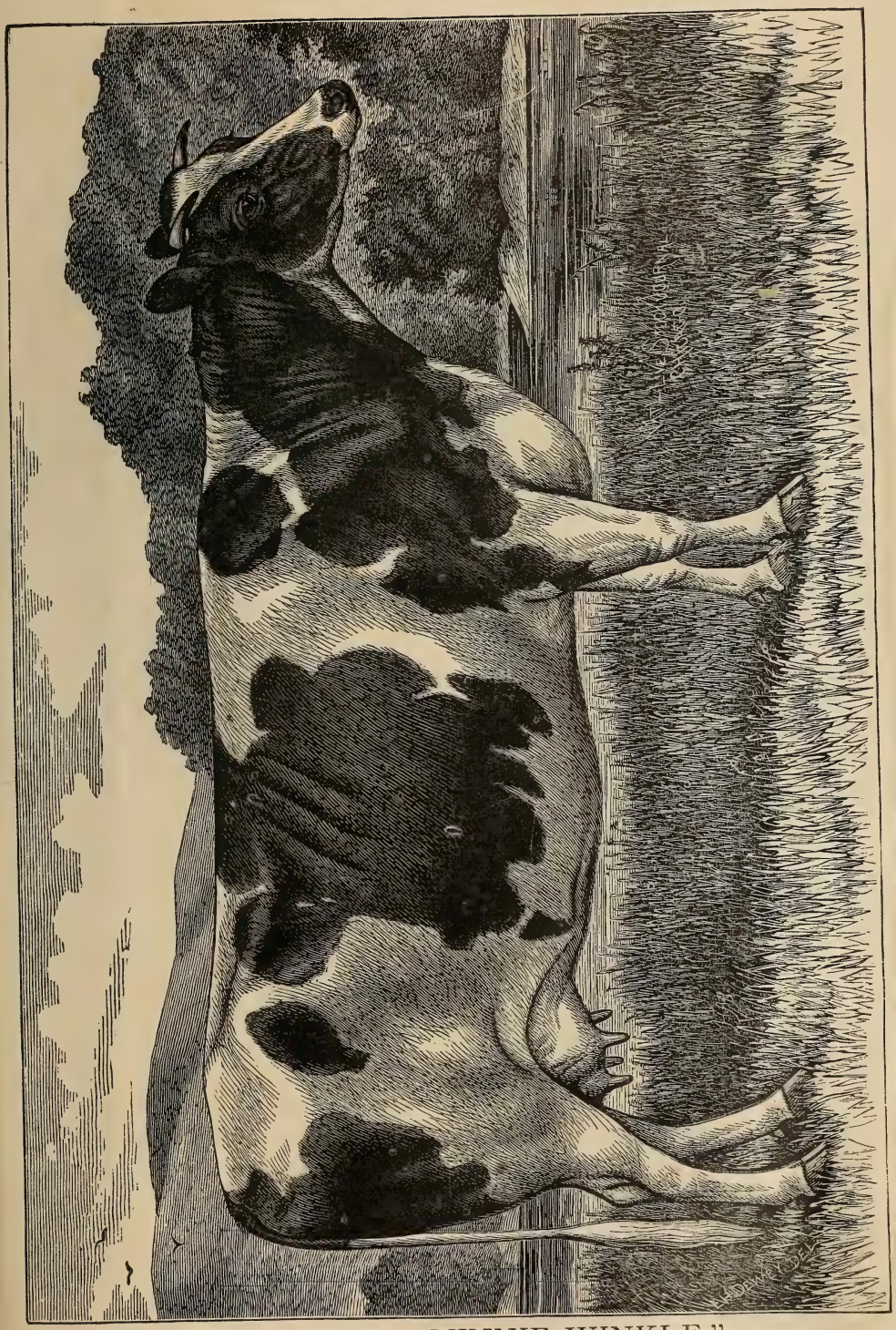
The transactions of the Elgin Board of Trade, which operates solely in dairy products, during the past year were as follows:

Pounds of cheese sold, 6,673,386; pounds of butter sold, 1,174,385.

Cheese ranged from seven to thirteen cents per pound, and butter from twenty-two to thirty-six cents.

The average sales of each meeting were $29,975.83¼.

In connection with the above we give the following figures, as to totals in pounds, of the dairy product of the United States, which, when fairly considered, are enormous, and, we may add, constantly upon the increase: The annual product of cheese in the United States for the year of 1877 was 300,000,000 pounds, or about 1,000,000 pounds for each working day of the year. Of this product 110,000,000 pounds was marketed abroad. The butter made during the same period is estimated at 800,000,000 pounds.



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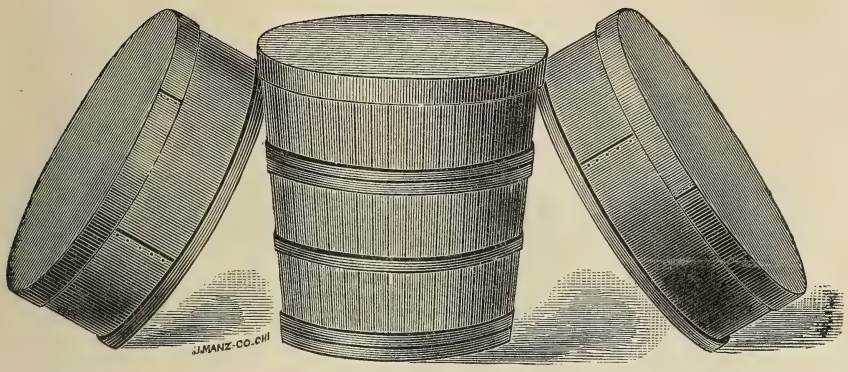

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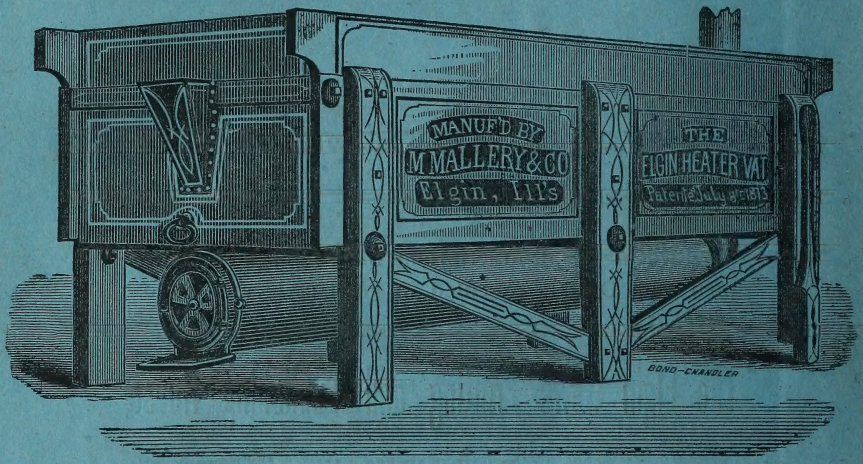

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