

## The Dairy.

### American Dairymen's Association.

#### Ninth Annual Convention.

The preliminary meeting of the Ninth Annual Convention of the American Dairymen's Association was held in Association Hall, Utica, New York, on Tuesday afternoon, the 15th instant. At half-past eleven o'clock ex-Governor Seymour, the President, called the Association to order. A Committee to regulate the order of business was appointed, who brought in their report in the afternoon, after which the business proper of the meeting commenced by Mr. O. S. Bliss, Secretary of the Vermont Dairymen's Association, reading a paper upon "butter making." Mr. Bliss read as follows:—

"Upon nearly every dairy farm in the country, however excellent in the main, there is, somewhere in the pasture or runway, one or more noisome sloughs, or swales, where, during the long drought, which we are sure to get, as often as two summers out of three, the cows eat enough coarse, ill-flavored herbage to affect the flavor, and perhaps the color of the butter. They resort here, too, in fly time, and often, after standing in the mud and filth for an hour or two, turn around and sup up the slough water charged with various forms of impurity, which are certain to make their mark on the milk and butter. It is idle to argue that an abundance of good water elsewhere will obviate these evils; cows frequently acquire morbid appetites, and prefer the filthy to pure water. There is but one way to guard against the evil, and that is to remove the temptation wholly and entirely. To put a few rods of drain tile into such a place and draw off the water, and then to burn off the coarse swale grass and weeds, and harrow it over thoroughly, and sow on a mixture of pasture grass seed, or even of June grass alone—which is of all others, the one most valuable grass for the production of butter—at an expense of a very few dollars, so few as hardly to be missed, will sometimes have a most striking effect upon the quality of the product of a whole dairy. Nor is that the only advantage. It will produce enough, more and better feed to pay the whole expense in a very short time. It is not always necessary to resort to thorough drainage in order to relieve pastures of their more obnoxious features in this respect, but it is necessary in that manner, or by open ditches, or in some other way, to remove all sloughs of stagnant and pool water, and the vegetation that grows out of such, in order to be entirely sure that the butter produced shall be fine flavored, and of good texture, especially when the cows are, by reason of drought, forced into them for either food or drink. I have known instances when the laying of 30 or 40 rods of tile has converted an acre of land that was a nuisance, a pest, an eye sore, into an acre of most valuable land, and supplied a herd of 40 cattle with all the pure water they wanted to drink in the driest season. The butter produced from hay and grain grown upon drained land, is also better in every respect than that produced from the fodder grown upon undrained land. This is especially true of the texture of the butter. I have several times, in this connection, alluded to the texture of the butter, and it may seem to some of my hearers, that I am laying undue stress upon that. Such is not the case. The quality of butter is very largely dependent upon texture—in fact, texture constitutes quality, and the quality of the food consumed by the cow has fully as much to do with it as with the aroma. Butter may have an excellent, and entirely satisfactory aroma, and yet if greasy, salty, and lacking texture, it will be deficient in flavor—will lack that especially delicious "quality which gratifies the palate."

I have not sufficient knowledge of the business to speak advisedly upon the subject of steamed, or cooked food, but, unless it is cooked quite dry, it is not probable that any particular advantage will result. I know from experiment that dry shipstuffs, and meals, are better than wet. The chopping, or chaffing of dry fodder, and mixing it with pulped mangold and meal, or bran, and laying it away in menses for a few days, till it begins to develop heat, is an economical, and, I believe, a most excellent method of preparing food for a butter dairy. The mass becomes homogeneous, and is eaten more freely, and digested more perfectly than when fed in separate parcels. If it is necessary to give the cows any fodder of a low quality, it can as well be hidden here as in the steamed mass, especially if the mass is left till it gets quite warm. I believe in giving cows all the food they will eat. We hear a great deal about the evils of over feeding, and "pampering," but according to the best information I can get, there are a

thousand that are not fed enough where one is over-fed. It is always wiser to use a machine to its full capacity, and when it is used up get another, than to keep it along to rust out. I would not be understood that there is no such thing as over-feeding. Of course I would not argue for indiscriminate stuffing with rich food, but I do insist that there is no such thing as over-feeding with appropriate food. An abundance of clean water is necessary for cows, but I have yet to learn that "pure soft water" is any better than "hard limestone water" for a butter dairy. The cows may relish one kind better than the other, but I think that is much with them, as with the human family, the result of habit.

An interesting discussion on the relative merits of dry and wet food followed, in which Mr. Bliss gave his opinion in favor of dry food, which, he contended, was necessary to produce the best kind of butter. The juices in the stalks of plants, he said, were very prejudicial to butter-making. Several of those present differed from Mr. Bliss, and in favor of wet food instanced the beneficial effects of wetting dry food.

A paper was then read by Mr. L. T. Hawley, of Onondaga, on "Making and Marketing Butter."

Mr. Hawley's paper considered the two methods usually pursued—churning the cream only, and churning all the milk with the cream—and insisted upon the necessity of perfect cleanliness in the food and drink of cows in the dairy and in the manufacture of the butter, and in the place where it was stored.

A discussion on the cooling of milk followed, when Mr. L. B. Arnold said that the cooling removed any animal odor if the milk was not reduced below 60°, that the odor could be extracted by heating the milk, and when the vapor was reduced in temperature to 60° it condensed into a volatile oil; but if the milk was cooled rapidly to 55° the volatile oil, or odor, was condensed in the milk. He thought that if a system could be invented for raising the temperature to 130°, and then cooling, the odor would all escape, and all the cream rise. Mr. A. Willard said that Swedish butter was made from milk cooled with ice-water immediately upon its acceptance at the factory, and the butter brought the highest price in the London market. Mr. Stewart, however, attributed the good quality of the butter to the feed given.

Mr. Hawley estimated the loss to dairymen in the State of New York from improper butter-making at \$20,000,000 annually.

An interesting address was delivered to the Convention by Mr. Greene, of Pennsylvania.

#### Butter-Making in Creameries.

It is well known that the finest grades of butter are made at creameries, or in private dairies managed essentially upon the creamery principle. Each season shows a finer and more decided discrimination in qualities of butter in the markets, and proves that fastidious tastes appreciate the pure flavor of creamery butter. The market reports never show a superabundance of fine butter, and there is absolutely no danger from over-production.

The question is not whether we shall make butter, but how shall we improve the quality of our butter. May there not be a sufficient amount of fine butter produced to force down the price of the detestable stuff that constitutes so large a proportion of the entire product, and discourage its production? The question is not whether we shall make skim cheese, but how shall we make better skim cheese. The fact is that much greater skill, much closer attention, and much better command of expedients is required in making skims than in making whole milk cheese. Many a successful operator of a full milk cheese factory might fully satisfy himself on this point by making the trial. There seems to be in skimmed milk a natural tendency to the extremes of dryness, or of premature decay, and to keep between these extremes in all cases, I venture to say has not been the good fortune of any manufacturer. Those who have acquired the greatest skill, if honest, will confess that they acquired it only after having made repeated failures and plenty of worthless cheese, and that even now they sometimes meet cases that baffle their skill. One of these stated to the writer that he sacrificed in a single season \$500 worth of cheese. These are simply plain, unvarnished facts in regard to the manufacture of skim cheese.

At present, success in conducting creameries, means a superintendent with skill, quick perception, quick decision, prompt action, and an amount of energy sufficient to counteract, at least, in a measure, the damaging effects of negligence on the part of the dairymen. When all milk shall be subjected to a process of aeration, as well as cooling, then will the character of both butter and cheese, but particularly of butter, be greatly improved. When milk becomes tainted, either from the food of the cow, the health

of the cow, from the stable, or from standing too long in close confinement, the cream partakes tenfold more of those taints than the milk. In such cases the cheese would be better without the cream than with it. While butter made from cream of that character would show the taint to an extent that would render it worthless for the table. It is a fact too little appreciated, that the quality of butter is more sensibly affected than that of cheese by difference in breeds, difference in soil and pasturage, by the habits of the people, and in short, by whatever influence is exerted upon the character of milk, so that in many cases very fair cheese may be made where you could make only a very inferior quality of butter.

The practice of deep setting has a great advantage in economy of space, but it has the counter disadvantage of vast expense and heavy labor. Inventive genius must soon supplant them with something more generally applicable. We recognize in butter making nothing of the nature of a fixed science. We regard it as a long neglected science that has just arisen from a state of slumber, as it were, and that shall progress with its handmaid until, in a few years hence, we shall be surprised to turn back and recall the state of progress that seems to us now quite encouraging.

In answer to a question as to the number of pounds of milk necessary to make a pound of butter, Mr. Greene said that he had not tried to exhaust the milk, but was in the habit of leaving sufficient in it to make a blue skim cheese. Thirty pounds of milk would make two pounds of this cheese and one pound of butter. Mr. Greene favored deep setting.

In answer to a question, Mr. Arnold said that the acid in sour cream did not act upon the butter. But in the sour milk alcohol is formed by fermentation, and this alcohol destroys the butter.

Mr. Sheldon was called upon to read his paper upon his experience in making cheese with milk delivered but once a day. It was as follows:—

#### Mr. Sheldon's Experience.

During the season of 1872, some of the patrons furnishing milk at my factory were desirous of being relieved of the labor of delivering milk twice a day, and requested of me the liberty to keep their milk home at night, agreeing to care for it in a suitable manner, and bring it in good condition in the morning, in some instances the night's and morning's milk together, and, in other instances, where the menses were larger, in separate cans. These patrons had an abundance of cool running water in which they might set their cans during the warm weather, and, as it would save them a journey of four or five miles each day, I readily acceded to their request. In fact, I was desirous of the opportunity that would thus be afforded to test the practicability of delivering milk but once a day. Throughout the season the condition of this milk which was delivered but once a day was fully up to the average standard of the other milk brought twice a day, as far as it could be determined without an actual test by working separately. The season closed leaving upon my mind an impression favorable toward delivering milk but once a day for the manufacture of cheese.

At the commencement of the cheese-making season of 1873, we expressed our willingness to receive milk but once a day from all who would care for it in a proper manner, and bring it in good condition, unskimmed, to the factory. We gave such instruction, from time to time, as seemed needful, particularly insisting upon a thorough ailing. Nearly one-third of the milk brought to the factory came but once a day; those furnishing the other two-thirds preferred the delivery to the care of the milk, or were unfavorably disposed toward the once a day system. Some of this latter class claimed, that in addition to the extra delivery, they sustained a loss in having their milk made up with the once a day milk. To satisfy them, as well as to carry out an original purpose, I instituted a series of experiments, working each class of milk by itself, noting the amount of cheese from each, as also its quality, probable value, and percentage of shrinkage. The first experiment was made July 12. The temperature of the atmosphere at sunrise was 50 deg., and the evening previous some 10 degrees warmer. The day's milk was worked in three vats. For convenience we will designate them No. 1, No. 2, No. 3; No. 2 being the vat in which, in this, and the following experiments, the once a day milk was worked.

No. 1 vat, with 3,919 lbs. milk, was taken up four and one-half hours from the time of setting; No. 3 vat, of 3,797 lbs. milk, was taken up five hours after setting—the two vats producing 847 lbs. cheese, and requiring 9,109 lbs. milk per pound of cheese; No. 2 vat, of 3,662 lbs. milk, was taken up five and one-half hours from time of setting, making 290 lbs. cheese, using 9,359 lbs. milk per pound of cheese; a