

## The Dairy.

### American Dairymen's Association.

The annual convention of the above Association was held at Utica, N. Y., beginning on the 12th of January and continuing during that and the two following days. The attendance was, as usual, large and composed of representative dairymen from all parts of the continent mainly, however, from the great dairy region of Central New York. Compared with previous conventions of a similar kind the number of papers read was not so large, but the contents of each were considerably greater, whilst the variety of information adduced as the result of many practical experiments tended unmistakably to show the progress that is being made in this most important department of husbandry.

The first question discussed was that of milk, its quantity and quality,—in which the Hon. J. Shull of Hon. Mr. Moon, J. M. Joslyn and Prof. Arnold took part. All these gentlemen agreed that the quality of milk is invariably due to the nature of the food. Hon. Mr. Shull, however, asserted from his own experience that overfeeding, or feeding of too rich a nature, reduces the milk both in quality and quantity. Corn meal, apparently the great staple over there, received a large share of attention. Mr. Shull maintaining with reference to it that whilst eleven pounds or under, administered daily to each animal, had a beneficial effect from a dairyman's point of view, a larger quantity of the same material stimulated the system rather to lay on fat, whilst it at the same time tended to produce fever. For old cows, however, he advocated heavy meal feeding, and offered on this theory the following as his experience, taking as his basis a grade cow which when fattened weighed 1,300 lbs.:—Value of an old cow in the fall about \$15; value of milk whilst fattening \$15 or \$16; cost of feed \$61; sale of carcass \$68—the amount of labor expended being offset against the manure gained. Prof. Arnold, on the question of old cows, considered that, after they have been milked for a long time, there is a tendency to turn all food into fat instead of milk.

The subject of 'Curing Rooms' was next discussed, and the necessity of a pure atmosphere with a temperature of from 65° to 75° fully demonstrated:—full milk cheese requiring a lower degree than half-skim or skim cheese. It was likewise deemed an important point to have the curing room disconnected from the factory proper to prevent the absorption of odors from whey and other matters. From the *Country Gentleman* we condense the following continuation of proceedings.

Mr. T. D. Curtis then followed with a paper containing *Some Hints*. It requires good milk to make good cheese. The milk should contain at least 12 per cent. of fatty, or butyraceous matter, or the cheese will be too dry and not rich enough to cure well. He thought that if oleo-margarine can be worked into the cheese, the cream already in the milk could certainly be retained in the cheese. He objected strongly to skimming. Cheese with plenty of cream in it keeps well, while the skimmed article must be used while new, or it dries up and loses its value. Mr. Moon said that he had found that cheese partly skimmed cures in thirty days, and is perfect cheese in eight months from the time it is made.

Mr. C. L. Sheldon then read a paper on *Acidity*. It requires much judgment in cheese making to determine just when to dip the curd to prevent farther action from the lactic acid developed during coagulation. It has generally been supposed that if exposed to the action of the acid too long, the fats in the curd would be destroyed, and the cheese thereby injured. But he has found that if cheese, which has thus lost flavor, is kept much beyond the usual time of cutting, it will be found rich, meaty and high flavored. Lactic acid, therefore, acts as a conservative force in retarding the ripening of the cheese. He has found out by trial that cheese made when a high degree of acid was developed, could be held much longer in New York market than the ordinary October cheese made with a low degree of acid.

President Seymour then took occasion to urge upon dairymen the importance of procuring and learning the use of microscopes, as invaluable aids to them in determining the quality of the milk furnished and the product made. He thought that a good entomologist would be of more use to the dairymen and farmers of the State than two door-keepers at each door of the legislative halls.

A paper on *Cream*, by Dr. E. L. Sturtevant, was then read by the Secretary. Cream is an uneven product, rising in layers, the largest globules at the top, and these make the best butter. The lowest layer of cream is worthless for making fine butter. Milk yielding only 10 per cent. of cream may make more butter than that which gives thirty per cent. The large percentage of cream in favored breeds, or favored cows, has no material value as a criterion of the yield of butter. From the fact that cream rises in layers, the butter from shallow setting of milk may be greater in quantity and less quality than that made when the milk is deeply set. In his practice the dairyman must be guided by actual experience, instead of theory or guess-work. He thought shallow setting of milk the best to produce quantity of butter. He would not pour in water to cool the milk. Mr. Joslyn said he has found that by pouring in water to cool the milk suddenly, he obtained more butter without injuring the quality. Mr. Arnold thought the thinning of the milk permitted all the cream to rise, and thus increased the product. Some discussion then followed on the subject of heating instead of cooling the milk, to expel the animal heat. Several, among whom was Mr. Arnold, advocated this quite strongly. Care must be taken, however, that the heating be done slowly, as sudden changes of temperature injure the product.

Mr. J. M. Joslyn of Cattaraugus then exhibited a cheese made entirely from sour milk and buttermilk. The cheese was rich, fine and of good flavor, and according to Prof. Arnold was well ripened and digestible, and perfectly wholesome. Mr. J. said the cheese was made at a temperature of 59°, less rennet being used than for sweet milk, and the cheese was cut with a perpendicular knife, in the vat. About three pounds of salt were used to the 100 pounds of curd. He has worked milk that was 84 hours old, and none less than 36 hours. He got 40 cents for his butter, and never less than 13 cents for his cheese, most of the sales being at 14¢ and 14½¢ in New York. He gets 3½ pounds of butter from 100 pounds of milk and then makes the usual amount of cheese. Mr. X. A. Willard spoke very favorably of the quality of the cheese made by Mr. Joslyn's process.

L. T. Hawley of Syracuse then read a paper on *Manufacturing and Preservation of Butter*. Salt, practically, does not preserve butter, but gives it flavor. It will become rancid nearly as soon if salted, as if not. There is but one way to preserve butter, and that is well understood by a majority of dairymen. The first thing is to select cows giving rich milk. The next is good pasture and pure water for the cows. The utmost cleanliness is required in every department. No odors should be allowed in or around the milk room. Churn at a temperature of 64°. If cream be kept several days, 50° is the temperature. After churning, the butter should be washed in brine; this dissolves the casein, and enables it to be washed out readily. After two or three washings, salt with Onondaga Factory Filtered Dairy Salt, one ounce to the pound. It must not be over-worked. None but perfect air-tight tins or tubs should be used; white oak is best, the package being well sealed in brine made of the same kind of salt: the butter must be packed solid, and covered with brine. The amount of salt used is determined by the taste of the consumer. It takes 65 to 70 pounds of salt to keep a barrel of pork or beef. It will thus be seen that in butter the salt used cannot preserve it. It is necessary that the butter should be so made and packed that it will keep, with or without salt. Poor butter cannot be made good by use of salt, nor fine butter injured by good salt. If the butter is taken from the churn before it is gathered, and put into a sieve, and then the buttermilk washed out by pouring brine on it until it runs off clear and the casein is washed out thoroughly, the butter will keep.

Mr. Olmstead, of Saratoga, said that the best butter he had ever seen was in Italy, and it had no salt in it. Parmesan cheese is made by scalding the milk, coagulating, cutting up finely, scalding again and then pressing. It is never salted. Mr. H. Farrington, C. W., enquired of Mr. Hawley whether salt is not needed in butter, to preserve the small portions of casein left in the butter. Mr. H. said that no difference is noticed in the keeping quality of butter when kept exposed to the air. Salt hardens butter. To keep well butter should be pressed by the ladle. He has seen butter which has been kept two years, and was perfectly sweet. It was salted one ounce to the pound, with Onondaga salt. The brine used in washing this old butter was not saturated, except at the last washing. The salt used is not to preserve the butter, but to dissolve the cheesy particles. The salt used in salting the butter is for flavor, not for keeping.

Mr. Chapman said that at the N. Y. State Fair in Watertown, the idea was advanced by a professor that salt preserves animal matters by keeping them cool. He said that Onondaga salt is stronger, and less is needed than of imported salts. Mr. Hawley said salt absorbs water from meat, and thus preserves it. It takes six ounces of salt to keep a pound of pork. Mr. Montgomery said that a year ago he used a barrel of Onondaga salt in a factory where he had made cheese for 11 years, and this barrel of salt spoiled his cheese. They were good for 15 days, but after that they became "sweet" and "rose." Mr. Hawley said that the trouble was owing to bad milk used in the cheese—"Fresh" salt is not so good as old barrel salt. There are more chlorides in the salt unless it is refined. He would wash each churning of butter in freshly made brine. Mr. Farrington said that a good cheesemaker has always used the common Onondaga barrel salt, and makes a uniformly

good article, and gets a good price. He thought that a good maker would always make good cheese, no matter what salt is used.

F. B. Stone read a paper on *Butter and its Preservation*. Butter, it chemically extracted from milk and properly put up, will keep indefinitely. The quality of butter depends primarily on the quality of the milk from which it is made. Butter undergoes no chemical change from the time the milk is drawn from the cow until it is gathered in the churn, if cleanliness has been strictly maintained. No water should be used in working the butter. If the butter has not been freed from casein or buttermilk, butyric and lactic acids are soon formed. Wooden packages are apt to injure the butter, and to absorb some of the butter. Metallic packages are not safe. Stoneware would be good if the covers could be fitted on tightly. No varnishes have been found perfect and insoluble. Paraffine makes a perfectly an tight and insoluble varnish for metallic packages. The tin cans are cheaply prepared by chemical action, so that the paraffine will adhere permanently. The cost of these packages is but little more than the ordinary wooden ones. Several spoke favorably as to the packages shown by Mr. Stone, as they are air-tight, and there will be no leakage whatever. Mr. Douglass, New York, objected to spruce packages or basswood covers, as they impart a bad taste to the butter, and this question of packages is one of the greatest importance to dairymen. Firkins should be made of oak, and Welsh tubs of ash, with a hardwood cover. Mr. Hawley objected to crocks as good conductors of heat. He said the cost of the package is a bagatelle; good butter in a good package will keep and sell, and in a poor package more than the value of the package is lost. Mr. Stone said that a very thin coating of paraffine only is required. As now made, it requires 160° Fahrenheit to melt it.

Mr. G. E. Morrow, Chicago, thinks that the perfect butter packages will not be "return packages." What is needed to satisfy the trade and consumers is a cheap, air-tight package—so cheap that when the butter is used out it can be thrown away. M. Munson, of Delaware county, can get his packages returned for 10 cents each, and unless a cheaper package can be obtained than is now made, "return packages" will be used in Delaware county.

**CHEMISTRY AVERAGES.**—The average number of pounds of milk to a pound of butter and to a pc md of cheese at the Aville Creamery, Ellington, N. Y., for 1873, was: for butter, 38,056 lbs. of milk to one pound of butter, and 12,025 lbs. of milk to one of cheese. The net value of a pound of milk was 1.4128 cents.

**JERSEY BUTTER AND HOW IT KEEPS.**—D. O. Fisk, of Shelburne, Mass., says he has kept Jerseys for twenty years, and finds them all he could desire, both as to milk and as to feeding qualities, when, for any reason they are past milking, or even as steers. That as regards keeping qualities of the butter, no butter will keep unless the buttermilk is all washed out and properly salted; and that Jersey butter is no exception to the rule.

**AN ITEM FOR BUTTER MARKS.**—The *Western Farm Journal* gives an account of the daily operations of Mr. Massa, residing near Nachusa, Iowa, who sold 1,605½ lbs. of butter, the product for ninety days of twenty cows—\$19.01 per cow. It does not appear that there was any selection of cows made, or any effort to increase the average product. The result is given simply as the results of ordinary dairy management, where particular attention is given to butter. The high prices paid for butter everywhere, and the scarcity of the article, will warrant farmers in giving particular attention to this product. The effort should be mainly devoted to securing an improvement in the quality.

**WILL CREAM RISE QUICKER IN A LOW TEMPERATURE.**—A California dairyman claims that the cream will rise sooner if the pans are set in ice-water, than even if in a room maintained at the usual temperature. It may be that by lowering the temperature to a certain point the rising of the cream may be facilitated, but when it comes to surrounding the pans with ice-water, it may be found that the theory is being carried one step too far. The philosophy of the dairyman is, that cream rises because it is lighter than the milk, and by cooling the milk down to almost freezing point, he would increase the specific gravity of the milk, and the cream would rise faster. If he did not also increase the specific gravity of the cream at the same time it might do so.

**BREEDING OF THE DAIRY STOCK.** Considerable attention has been given in the vicinity of Lewisburg, Penn., to the improvement of dairy stock, with the most gratifying results. The common native stock appears to have been used as a basis, upon which Short-horn and Jersey crosses have been made. Cows yielding from 14 to 15½ lbs. per week are not unusual among the cattle so bred, and some individual animals have sold as high as \$500 to \$1,000. Undoubtedly there can be a great improvement made in the value of cattle for dairy purposes by judicious crosses and a continued course of selection. And it would be difficult to find anywhere a race of cattle which will respond more readily to an effort for improvement in this and other directions than the common native stock which every farmer has at his hand.