Pasteurization.

Mr. Forest Pierce, Eau Claire, Wisconsin.

Pasteurization of Cream as Applied to Buttermaking.

When I was informed that the subject of pasteurization was assigned to me, I felt very diffident for I realized that I had a very broad and important subject. I would much rather listen to some one who has had more experience in this line, but if I can awaken some interest by bringing out a discussion, I shall feel well repaid.

Pasteurization, as we all know, consists of heating and cooling in a manner which will destroy the vegetative or actively growing bacteria. Cream is also considered pasteurized when the bulk of the bacteria is destroyed.

The objects of pasteurization are to secure more uniform quality, better keeping quality, also more effect from a starter. The standard of American butter is becoming higher every year. Methods that suited the general market five years ago are away out of date at the present time.

The use of good starter has done much to raise the general standard of butter in America, but the finest starter added to cream already teeming with good and bad bacteria, can not produce the best results.

It is evident that the best results are obtained only when the bacteria in the cream are first destroyed by pasteurization so that the pure germ introduced by the starter may have a clean field for development.

If nothing but clean, uncontaminated cream was received at our creameries, there would be no necessity of pasteurizing as such cream could not be improved by this process, but we can not hope, for some time, at least, to have all cream arrive at the creameries in good clean condition, some cream will still come to the creameries too good to reject and too poor to make the best quality of butter.

During the past few years, a great many experiments have been carried on at the various Dairy Schools with a view
of determining the advantages of making pasteurizing butter. These experiments had for their immediate objects,

1st, To study the extent to which pasteurization improves the quality of butter,

2nd, To study the keeping qualities of pasteurized butter.

Where the cream was of average purity, the butter from the pasteurized cream scored on an average, three points higher than from the unpasteurized, using the same amount of starter in each case.

Where the cream was below the average purity, the butter scored 4 to 6 points higher from the pasteurized than from the unpasteurized, using the same amount of starter in each case.

The keeping quality of the butter, made from the pasteurized cream was in most cases, so far superior to that from the unpasteurized, that it alone should warrant the general introduction of pasteurization in our system of buttermaking.

The process of pasteurization is not a difficult matter, providing you are equipped with the proper machinery to do it with and use the proper amount of care, but both these things are highly essential.

We have found the Wizard Agitator, to fill all requirements as it thoroughly heats, cools and aerates the cream besides serving its purpose as a cream ripener.

We heat the cream to 140 degrees Fahrenheit with hot water and steam circulated through the coils taking about 20 minutes. It is held at that temperature for 30 minutes then quickly cooled to 65 degrees, starter added, left at that temperature until sufficiently ripened, then cooled to churning temperature then left long enough to thoroughly harden the fat globules and churned.

We have as yet to find cream that can not be improved by this method of pasteurization.

The cost of pasteurization according to Danish experiments is approximately one cent per pound of butter. This is also confirmed by practical buttermakers in this country who have practiced pasteurization for several years. Thus, it will
be seen that the cost is very small when compared with the increase in price which it should bring if the butter scores from 3 to 6 points higher. I believe the time is not far distant when the pasteurization of cream for buttermaking will be compulsory, but let us not wait until compelled by law to make better butter. Let us make the best butter we know how, by pasteurizing every pound of cream used in buttermaking.

Thanking you all for the kind attention, I am yours for better butter quality.

Mr. Olson: Would not something besides the Wizard Agitator pasteurize the cream?

Mr. Pierce: I think so, Yes Sir.

Mr. McGill: Have you any trouble with the cream burning on the disc?

Mr. Pierce: Very little trouble where I use steam and water at the same time.

The Chairman: The next on the program is an address by Hon. B. D. White, of the Dairy Division, Washington, D. C.