

I rise to a difficult undertaking. It is difficult enough for us farmers to arrange our thoughts and present them to the public when our theme is clearly comprehended; but when we are called to discourse to an audience like this upon a subject that has long baffled the efforts both of practical and scientific men, and is still deeply involved in mystery, as is the nature of rennet, it is, to say the least, asking a great deal of a farmer.

Though cheese dairying has been long practiced, it is notorious that in many of its operations we are still working blindly, not knowing what laws we are obeying or disobeying, and in no respect are we more in the dark than in the use of rennet. Who has not wondered for the thousandth time what there was so peculiar about the action of rennet, and whether it were not possible to curdle milk by some other agency, and thus avoid this objectionable accompaniment of cheese-making?

That so many queries remain unsolved is not to me a strange fact. It is to be expected of us practical men that we should be able to fathom such subtleties. This task belongs to men of science, and to them we must look for the solution of the theoretical problems that loom up in the field of our labors.

That the principles involved in the manufacture of cheese will be ferreted out, and cheese-making become a science instead of an empiric art, I confidently believe; and I believe the reason this has not already been done is because the attention of scientific men has not been sufficiently directed to our necessities. But science is coming gradually to our aid. The presence here to-day of so goodly a number of men eminent for ability and scientific attainments is an evidence of the fact and augurs well for the future. I believe there is a good time coming for dairymen, and that we shall have a taste of it before the close of this Convention.

But we must not rely too much upon outside aid, we must help ourselves to the best of our ability. We have, since the organization of this Association, done much toward educating ourselves by a mutual interchange of thoughts and experience, at these, our annual gatherings; and our hopes of future advancement, in my opinion, depend largely upon a continuance of that exchange. It is from this consideration only, Mr. President, that I could now be induced, at the risk of exposing ignorance, or of repeating what is already known, to approach the discussion of this formidable subject, and to present a brief statement of experiments made and facts observed in reference to the nature, use, and treatment of rennet.

I began the investigation of this subject when I began cheese-making on my own account, some twenty-five years ago. It was then supposed that rennet acted upon milk first, by the acid it contained; and, second, by generating an acid in the milk, through its mysterious ability to convert milk sugar into lactic acid, and by this means neutralizing the soda that was supposed to hold the cheesy matter in solution, and leaving the casein free to assume its naturally solid condition, and hence formed curd.

There was casein, being a representation of a stronger acid out this theory ceased in producing flavor to the product.

In the next acid, I put potassium alkaline that they assume the same perfectly, and strength. The

This experiment the coagulating alkaline condition thus left in the thought occurred not changed independent of the gastric juice wise than that check, if not a suggestion. A cave on one side filter. If then through, be careful would pass through all its peculiarities. The presence of a time, a mixture. Upon myriads of men Experiments, tain whether the strength of the upon their present important portions was composed of inclosed with nucleus in the cells. By experiment and office was ones were found tions peculiar the omnivorous in clusters of