

settled one point pretty conclusively, viz: That it proceeds from no mineral or other poison that the chemist can reach. It is of some other character; something that dissolves in his crucibles and eludes his search. What, then, can the cause be? is a query that will very likely be raised in the mind of every hearer. But to that query I can only reply as Agassiz did, when he was asked if the human race had a plurality of origin: "I wish I knew."

I propose now, for a short time, to call your attention to some of the circumstances that might be supposed to vary fermentation in cheese, that you may judge for yourselves whether there is any probability that the poison originates in that quarter.

The subject of fermentation in connection with the dairy interest, is both interesting and important. Everything in cheese-making goes on by fermentation. By fermentation we curdle the milk and extract the whey; fermentation ripens the curd in the vat; and the conversion of that curd into cheese in the curing-room, whether it be palatable or unpalatable, wholesome or unwholesome, is the work of fermentation only. This subject was very clearly and ably presented to this Association two years ago, and by those who heard it is doubtless well remembered now.

Every one present, it may be presumed, has a general idea of the nature of fermentation; but I may remark in passing, that the changes it occasions are always accompanied with the growth and development of myriads of living microscopic fungus plants, and that their growth and multiplication are regarded as the *cause* of the changes produced, and that these microscopic plants, or rather the germs or spores from which they originate, take the general name of *ferment*; so that when the terms ferment and fermentation are used, you will refer them back in your mind's eye to the germs as the moving cause.

I may further remark in regard to these fungus plants, that they are susceptible of great variation from changes in temperature, or from the composition of the substance in which they may grow. It is the same species of fungus, growing under different circumstances, that raises our bread, makes alcohol, beer, vinegar, wine, and cheese. This fact has some significance in looking for the