

British Columbia Dairymen's Association.

THE HIGH COST OF BACTERIA.

A Lecture delivered at the Annual Convention of the B.C.D.A., Hotel Vancouver, January 21st, 1920.

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MY discussion with you is to be primarily concerned with milk and milk products. It is not my purpose to deal with the question of milk as a food. Professor Washburn, who will speak to-night, is more competent to deal with that phase of the question than am I. All I will say is this: The necessity for including milk in the diet, especially in the diet of the young, and particularly of the infant, has been established beyond any possible doubt. The dramatic investigations of Hopkins, of McCollum, and of other workers have irrefutably demonstrated that not only is milk necessary as a food, but that it is positively essential on account of the growth-promoting substance therein contained.

To-day we hear much with regard to the high cost of living. I am not an economist, and am therefore not competent to submit observations on this important question. It is a truism so obvious that possibly I should apologize to you for venturing to present it, that one of the basic factors responsible for the high cost of living is lack of production. We must have increased production, and then conservation of that which has been produced. Lack of conservation constitutes waste and spoilage. Waste and spoilage in milk and milk products are principally due to the activities of the bacteria. Waste and spoilage are principally due to the failure to exercise the proper control over the bacterial population of these products. The nature of our loss and the amount of our loss due to spoilage are what we pay for our bacteria—the high cost of bacteria.

I am quite sure that it is not necessary to take your time in dealing with the bacteria in the specific sense. As cultivators and culturists of the soil, you are so well aware of the part which the bacteria play in all the processes of nature that it would be not complimentary on my part to impose upon you a detailed discussion. The point that we are concerned with is the fact that, while these organisms are so small, these single-celled plants are so minute that they have to be multiplied at least 1,000 times before they can be seen at all under the microscope, their rapidity of multiplication is such that they constitute a factor of the most vital importance.

For a number of years the literature has contained references to the association of milk with certain specific diseases—with tuberculosis, typhoid fever, diphtheria, septic sore throat, and so on. With us the number of instances in which these diseases have actually resulted from the milk-supply is comparatively rare. Provided the cattle are healthy—and in this respect no Province in the Dominion is in such a happy position as is our own—it must be remembered that, if outbreaks of the diseases cited above do occur, milk is simply a "carrier"; and it cannot be emphasized too much that such contamination arrives during, or subsequent to, production.

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