

to some extent to the butter which it contains, depends in a higher degree upon a gradual transformation which the casein or curd undergoes in ripening.

Such being the process, it is clear that an even distribution of the fatty matter (the globule containing the olein, margarin, &c., each compounds of their own fatty acid) through the curd is desirable, in order that each particle of ammonia and acid as set free may, at the moment, be in contact. Consequently, that milk which is the richest in butter by analysis, and yet which throws up the least cream upon standing, and whose cream, when once risen, will readily remingle with the milk upon agitation, most nearly fulfils the desired condition.

So much confidence do I feel in the correctness of these conclusions, which are derived from the study of the milk globule, that I am willing to affirm that the same care used in making cheese from milk of each breed will produce a different quality in the result, although the milk may contain equivalent amounts of fat by analysis. Even the cream of a few hours may be skimmed from these milks, and the cheese made from the remainder will produce such variable grades in ripening that some may be sold as skim-milk and others as full milk cheeses.

The Jersey milk, according to these views, is unfitted for the cheese-maker, and the farmer who keeps Jersey cows to supply milk for cheese-factory use is, paradoxical as it may seem, producing results most beneficial to neither himself nor the manufacturer.

The Ayrshire milk is remarkably fitted for the uses of the factory, as not only does it contain the chemical elements of cheese, but the fat contained in that form which is the most useful, and the forms not carried to such extreme as to unfit the milk for changes in the manufacturing system. With Ayrshire milk I cannot doubt but that reasonable skimming, or that skimming which would ordinarily take place in manufacture, could take place without necessarily deteriorating, to any great extent, the quality of the cheese produced. Whatever loss there might be would be so trifling as to be readily compensated for by the skill of the manufacturer, for only that cream, in practice, would be removed which usually escapes in the whey as waste.

The Dutch milk would appear by its structure to be hardly equal to the Ayrshire milk for cheese purposes, but it is possible that the ready miscibility of the cream with the milk, after the rising, might affect the deficiency of granule.

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Halifax, October 23, 1878.

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