

[On the Sugar of Milk] Dr. William James Almon

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Type

Drink

Food

Ingredients

milk

chocolate

chocolate stick

Places

Irkutsk

Petersburgh

Lake Baikal

Halifax

Nova Scotia

London

England

Source: Manuscript Notebook of Dr. William James Almon

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Description

A detailed description of a method for extracting powdery sugar from milk used in the cold dry climate of Irkutsk, pp. 235-36. The account, by Mr. Jahrig of Petersburg, was translated from French and published in May 1792 in *The Literary Magazine and British Review* Vol. 8, pp. 328-30.

Transcription

On the Sugar of Milk

By Mr. Jahrig of Petersburg

During the travels which I undertook by order of the Academy of Petersburg, among the Mogul tribes who inhabit the frontiers of the government of Irkutsk beyond the lake Baikal, on the banks of the river Salenga, I was particularly struck with the ingenious manner in which these people preserve during their long winters, a very great quantity of Milk, which they suffer to freeze, in iron kettles, which serve the[m] likewise for other purposes. When the milk contained in These kettles is perfectly congealed, they place them over a gentle fire, and take out the milk, reduced to a cake of ice, by means of a wooden spatula. This operation is begun on the commencement of the first cold for the milk is then found in greatest abundance, and the cakes of ice obtained by these means assume, as may be readily supposed the form of the kettle in which they freeze, and may be preserved all the winter. What, however excited my curiosity most was to see all these cakes of frozen milk, covered to a considerable depth with a white and apparently farinaceous powder--I observed the same thing in my small dairy which I was obliged to establish on the same plan[e] with those of, of these wandering people, and the children of my shepherds often brought me plate-fuls of that powder which they ate, and which they used also to sweeten various articles of their food. After this discovery I caused a number of cakes of frozen milk to be conveyed from a lower apartment to the top of a wooden House which I occupied, and which was a part of a temple consecrated to the idols of these

pagan People. These cakes in that place were exposed to the immediate contacts of the dry cold air, which prevails in that country almost the whole year. These cakes were placed perpendicularly, and by these means were more exposed to the effects of the air. I visited them very often and I perceived that this exposure contributed daily to increase the farinaceous substance, with which their surface was

covered. Every week I took it away by scraping the cakes, to the depth of two inches, and afterwards spread it out upon a broad dish, in order that the cold might destroy any remains of moisture, which would have prevented it from keeping for a length of time. This flour when thus exposed to a great degree of cold, and consequently freed from all its moisture, had a remarkable sweet and sugary taste. If dissolved in warm water, and when strongly stirred by means of a chocolate stick, one may procure from it, at all times and in all places excellent and well tasted milk. This discovery I consider as of great utility, since it may enable navigators to supply themselves with milk during long sea-voyages. Nothing will be requisite but to make the necessary preparations with care.

As I here speak of an experiment which I repeated several times, I can safely assure those who may be disposed to try it, that it will always succeed, but at the same time, I am inclined to think that all countries will not be equally favorable to the formation of this singular substance. The country in which I then resided, is one of the most elevated in the northern part of Asia, an alpine country, where the rivers are covered with ice, almost six months in the year, though it lies under the fiftieth degree of latitude.

Another peculiarity of this country, is the dry cold air, which prevails in it for a great part of the year. Dry winds as well as rain and snow, seldom come from the west: they come almost always from the North, and are generally preceded by a very mild South wind which blows for some time. The dry rarified air which continues here all winter increases the evaporation of all moisture contained in these ice cakes, and leaves nothing but the milk, the essential and so constituent part, under the form of a white powder.

To obtain, in a little time, a large quantity of this {...} it will be necessary to employ raw, in preference to, boiled milk. By making use of the latter, or that from which the cream has been taken, little or none will be obtained. Care also must be taken not to expose new milk, while it retains its natural heat, to the cold; for the sudden contact of the cold carries all its fat and caseous parts, towards the middle of the mass, so that the parts purely aqueous alone occupy the external surface. The interior part, which then appears rough, is often changed into a buttery substance, and produces no sugary powder. That all the fat and sugary parts

might be more equally distributed throughout the whole mass of milk, I suffered that newly taken from the cows to cool, and then pouring it into broad shallow kettles.

On the Sugar of Milk recipe from Early Modern Maritime Recipes: <https://emmr.lib.unb.ca/recipes/246>