Yoghurt A LA YAKUT

A.A. SAVVIN

This publication is based on extracts from the book *Pre-Agriculture Yakut Food. An attempt of a historical-ethnographic monograph* (Yakutsk, 2005) by Yakut ethnographer Andrei Andreevich Savvin (1896—1951).

The history of this monograph, as well as the life of the author, deserves special attention: the book was published half a century after the researcher's death. Moreover, of his immense scientific heritage only a short article was published in Savvin's lifetime.

Savvin was a self-taught researcher. He was born in a Yakut family of average means. Later the family was ruined, so he couldn't afford to attend a vocational school for more than two years. He worked as a copyist in a board, as a judge's assistant, book-keeper, village teacher… But these jobs did not satisfy him. His frustration was aggravated by private tragedy: his wife and six children died.

As an official beginning of Savvin's scholarly activity, one can consider his employment by the Yakut Institute of Language, Literature and History, at the age of 41. However, he himself said that as early as in 1928 he "began ordering books on theoretical ethnography from the capital and started studying the subject right away. I began to study and collect materials on the ethnography and folklore of my people in 1934. To do that, as a teacher, I sometimes got into very remote places of Yakutia, traveling both at my own expense and on assignments of research institutes. Studying books allowed me not only to fill considerable gaps in my education but also to start in-depth studies of the ethnography of the Yakuts… I decided to devote myself to this work first, last and all the time."

Savvin did not make a career as a scholar. At the beginning, he was even fired from the Institute for "insufficient education." He was not on the staff for more than a half of his working record. Nevertheless, Savvin, as nobody else, deserved the title of "a scholar": his efforts yielded immense field materials on various and sundry aspects of Yakut culture.

Savvin's works, though they are beyond the frontiers of Big Science, provide ample evidence of the breadth of his scientific interests and diversity of methodological approaches. He was a true "universal fighter": in every field — whether it be archeology, ethnography, folklore, religion, language, traditional medicine, or meteorology — he managed to seize the most essential and important aspects.

The monograph devoted to the traditional nutrition system of the Yakuts contains unique evidence collected by the scholar during many years of field studies. He did not manage to finish the monograph, which, like the rest of his works, was brought to the archive of the Yakut Science Center. And now, several decades later, Savvin's monograph has been published thanks to the efforts of the researchers of the Institute for the Humanities of the Academy of Sciences of the Sakha (Yakutia) Republic (editor E.N. Romanova, Dr. Hist.).

The main theoretical message of the monograph is: throughout long history the Yakuts have developed their original system of balanced nutrition with a rational proportion of all elements necessary for regular metabolism.

It should be noted that the reasoning and conclusions made by Savvin are surprisingly up-to-date. Now, when traditional farms and unique distinctive cultures are disappearing, using the unique experience of the traditional nutrition system of northern cattle-breeders seems to be a topical issue.

Yoghurt has become a hallmark food of civilized society, which proceeded from concerns about subsistence to caring for health. This sour-milk food is tasty, light, and well balanced. Advertisements and service counters lure people into buying new achievements of food technologies — "neo"-products with wonderful bacteria, cereals, and "biofibers"… But, as we know, everything old is new again. To make sure, it suffices to take a short tour back to the history of traditional nutrition systems

In the northeast of Asia, the Yakuts were the only Turkic-Mongol ethnic group; it was like an island in the sea of numerous Manchurian and Paleoasian tribes and peoples with much fewer populations.

Yakut food, its components and technology of production, like other manifestations of their material culture, held a prominent place among those of the surrounding peoples. As far back as in the 17th century, the Yakuts were mostly known as breeders of horses and horned cattle. Until the 1850s the Yakuts were involved in subsistence farming, namely in cattle breeding, hunting and fishing.

The middle of the 19th century was marked by rapid growth of commodity consumption and monetary circulation, appearance of gold mining and a new branch of economy, agriculture. As a result, the sale of animal husbandry products to mines intensified, which

At the beginning of the 19th century the Yakuts produced more than twenty different types of products from the milk of domestic animals. The names of most products were of Turkic origin. The method of producing many of them, as well as the formation of the cattle-breeding culture of nomads in Asia, dates many centuries back

became the main incentive for the development of truck cattle breeding and reduction of horse breeding. This perturbation in the traditional economic structure inevitably led to serious changes in food.

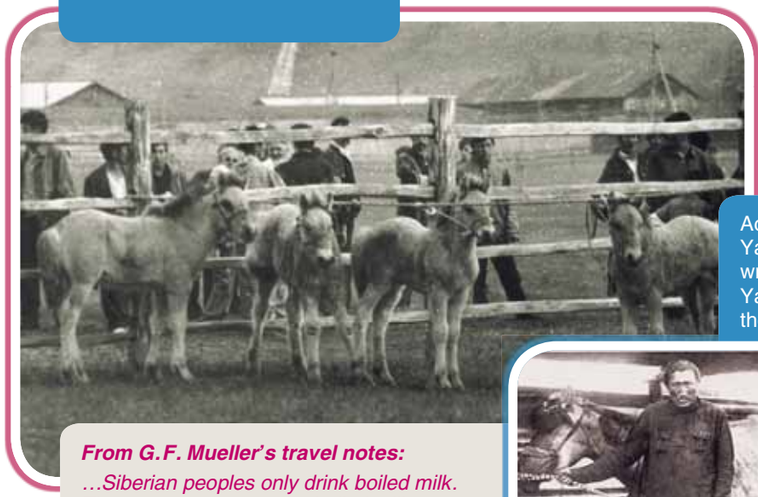
According to the data collected in 1769 by the Yakutsk Province Office, the Yakuts "drink milk of mares and horned cattle, and eat pine bark... meat of horses and horned cattle... various fish from lakes, springs and rivers... game, i. e., elk, deer, bear, hare and mole [water vole]".

Before the development of agriculture the quantity of carbohydrates in Yakut food was insignificant. The source of carbohydrates was undoubtedly animal starch — glycogen. Currently, it has almost been proved that glycogen is formed from animal proteins, in particular, from meat. Thus, the peoples eating animal food, mainly meat and fish, compensated for the lack of carbohydrates by assimilating them from animal proteins consumed in abundance. In addition, a considerable amount of carbohydrates was apparently consumed with sapwood that was eaten in some parts of Yakutia in great amounts. Sapwood, or rather bast, after fermenting or boiling in concentrated fat with high content of milk acid became digestible and nourishing.

Wood bark mainly consists of cellular fiber or cellulose, which eventually decomposes into sugar. Human intestinal bacteria can decompose up to 40% of cellulose of young plants, thus promoting the assimilation of its nutritious elements by a human organism. Solid fiber particles that cannot be treated by the digestive juice stimulate intestinal walls, activate the work of its digestive glands and muscles and enhance intestinal peristalsis.

Milk fat, which is the most important source of vitamin A, outranked in the food of the Yakuts. According to our data, per capita consumption of butter in average households was up to 17.6 kg per year, which is a record, because in 1914 its consumption did not exceed 10 kg even in Canada, which then was ahead of all American and European countries in this respect.

Lactic and alcoholic fermentation agents were added to mare's milk with leaven. The main agents of koumiss fermentation are *Bact. bulgaricum, Bact. lactis acidi* and *Torula kumyss* (koumiss yeast), the latter inducing alcoholic fermentation



Academician A.F. Middendorf, who visited Yakutia more than a hundred years ago, wrote: "Permanently milking mares, the Yakuts could get as much milk from them as from cows, depending on the circumstances. The Yakuts even assured me that they could get up to a bucket per day. But this could be achieved only by frequent milking."

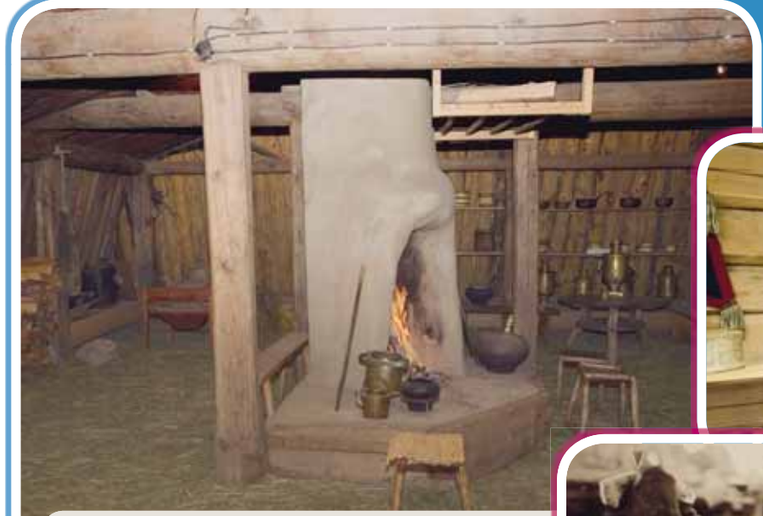
From G.F. Mueller's travel notes:

…Siberian peoples only drink boiled milk. They cannot consume unboiled milk — people start vomiting and get an upset stomach.

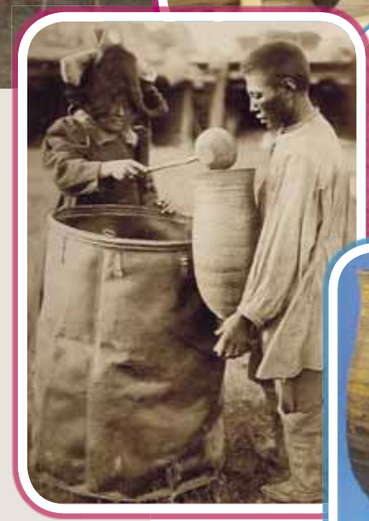
*…The Tartars, Mongols, Kalmyks, Nerchinsk Tungusses, Buryats, and Yakuts make a heady drink from mare's milk and call it Kumiss in Tartar or Kmyss in Yakut. Fresh mare's milk, immediately after one milked the mare, is poured into a special leather vessel with convex walls and a narrow neck; some warm water and ferment from old koumiss are added; then the mixture is repeatedly stirred with a wooden shovel until fermentation starts. The substance coming to the surface as a result of diligent stirring is skimmed off and is used for food instead of butter. Milk itself, after one or two days of fermenting, is called koumiss and is ready for drinking. Sometimes koumiss is left to ferment for 8 to 14 days, with fresh milk added after each milking, and when the vessel is full, they pour off to another vessel as much fermented koumiss as they need for consumption**

**Hereafter cited from: G.F. Mueller The Description of Siberian Peoples (Russian State Archive of Documents and Acts, stock 181, file 1386, part 1) translated and published by Doctor of History A.Kh. Elert (Institute of History SB RAS, Novosibirsk).*

The technology of producing **koumiss**, except for some slight differences, was the same everywhere. The following main features had to be observed:
1) Fermented mare's milk, diluted with water, was to be continuously and intensely stirred up with a special whisk.
2) After having been fermented and stirred, milk had to brew in a hermetically sealed vessel.
3) The lees of koumiss were used as leaven to produce the next portion of koumiss



…In the households of rich and noble people, who have a lot of cattle, koumiss is produced throughout the year. Poor people produce it only in spring when mares foal, and then they ask the rich for ferment. They do not let foals suck dams but tie them near the yourts with a long tight horsehair lasso, or string. The mares go to the pasture, and when milk starts burdening them, they come back to their foals, where they are milked. That is why the Yakuts call April Kulun-tutar-uia, the month when foals are tied to collect milk for koumiss.
*Koumiss is sometimes produced from cow's milk, but such a drink is less strong and does not have as pleasant a taste as the one made from mare's milk. Pagan Tartars, Kalmyks, Mongols, Nerchinsk Tungusses and Buryats on both shores of Lake Baikal use koumiss not only as a beverage but also to distil vodka, which they call Arak. The Yakuts do not distil vodka**



Chorons — koumiss vessels

Milk and vegetable food consumed in abundance compensates for the lack of such food as grain and meat and not only exhibits excellent treatment-and-dietary properties, but also protects from many diseases. That is why milk and green plant products have recently been called “protective food”.

In his well-known book *The Chemistry of Food and Nutrition*, Harry Sherman wrote that “protective” foods suggest enrichment with calcium and A, C, and B vitamins, which is usually of great benefit to the organism. This benefit also means enhanced viability and the achievement of “positive” health that is above the average level.

At the initial stage of settled life and of the development of truck cattle-breeding and agriculture, which replaced natural milk-and-meat and hunting-and-fishing economy with strong elements of collecting, the population had a limited access to milk, meat, and wild-growing and plant food rich in vitamins, organic and mineral substances. The deficiency of these products in the diet of many low-civilized tribes and peoples had ill effects.

Various milk and plant food products that the Yakuts ate in extreme abundance until the mid-1850s undoubtedly played the role of necessary protective food, which was very important in the conditions of regular draughts and unfavorable climate.

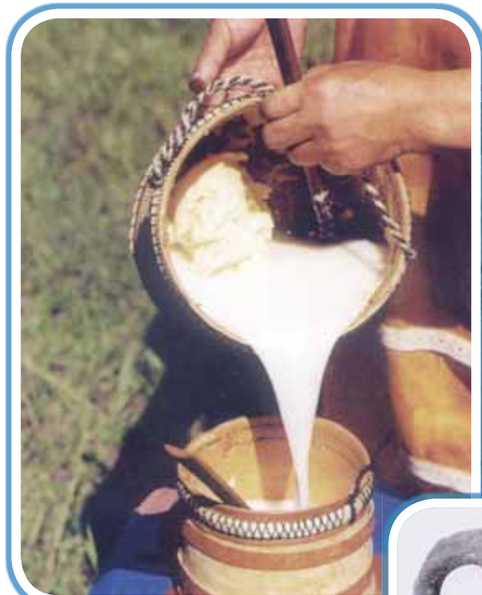
One of the milk products that was an important part in the Yakuts’ diet was koumiss, easily digestible and extremely nutritional food that intensifies metabolism and enhances the secretory activity of the gastrointestinal tract. Nowadays koumiss therapy has become widely used for sanatorium treatment of pulmonary tuberculosis and pancreas, malnutrition, secondary anemia, and low acidity.

The high content of various lactic-acid bacteria in koumiss leads to rapid elimination of microorganisms which induce putrefaction and zymosis in the intestines. People who drank koumiss rapidly gained weight and became stronger. At present, no one has doubts about good nutritional properties of koumiss, whose technology of production has refined over many centuries.

V. L. Seroshevsky reported in 1886 that the Bayagantaitsy said, “Long ago, but not too long ago, within people’s memory, our main food was koumiss.” They said about young people: “How can they compete in power and endurance with their predecessors? In the old times, a cropper got nothing but a sack of koumiss to eat. For months people did not get any other food and were able to mow from morning till night. And how they worked! Now people cannot mow like that. And all were healthy and strong then.” Not only local inhabitants but also explorers of the Yakut region experienced excellent properties of Yakut koumiss.

An important part in milk food was played by boiled fermented milk products — suorat (Turkic yoghurt, yoghurt, choort) and tar, which in fact is a variety of yoghurt produced by means of pure cultures of lactobacilli *Bact. bulgaricum and Bact. lactis acidi*.

There is no doubt that in suorat and in tar, both of which are produced by fermenting milk with different sour-milk products (for example, the latter, with sour cream and sour cream whey), as well as in yoghurt, fermentation occurs mainly due to active participation of *Bact. Bulgaricum* bacteria, which lead to very high acidity. This lactic-acid bacterium, which plays an important role in koumiss fermentation as well, was first separated from fermented milk “yagurt” widely spread in Bulgaria.



A great part of winter stores of the local population was buttermilk with fermented wild plants and berries, mainly sorrel, onions, cowberries, and black and red currants. The stock of buttermilk with sour plants and berries was preserved in closed cellars until first winter frosts. In the first half of November it was poured into a snow hole in the yard and frozen there. In winter these supplies were used to cook milk- plant and berry soups

Photo by S. Zelensky

In official documents, ***khayakh*** was usually called "Yakut butter". Before the spread of agriculture R. K. Maack wrote: "Among milk products, an important role in the food of local population is played by butter produced in a special way: it is mixed with sour milk and thus has a sourish taste." An appendix to the report made by the acting Yakut Governor for 1885 states that from milk "… the Yakuts produce the so-called Yakut butter ***khayakh***, a kind of cheese or cottage cheese, with a sourish taste, not too fatty, which is a rather tasty food in itself even without bread."
In southern regions, ***khayakh*** was stored up for winter in every household. The tradition still existed in settlements beyond the polar circle until 1940

Khayakh butter

Observations of the effect of suorat and tar, which are characterized by high nutritional properties as well as some medical properties, and the fact that their production technology and content of ferment are very close to yoghurt (produced by means of the same lactobacteria grown in laboratory conditions) proved that Yakut suorat and tar had almost the same chemical content and the same treatment-and-dietary properties as yoghurt.

According to Prof. I. Mechnikov's theory, systematic consumption of sour milk, in which fermentation is due to lactic-acid bacteria, in particular due to *Baccillus bulgaricus*, which increases acidity and thus prevents the developing of undesirable microorganisms in the intestines, can extend human life by 20—25%.

Fermented sour-milk products that amounted to at least 80% in the total milk ration undoubtedly played an extremely important role in maintaining Yakuts' good health. As everybody knows, many kinds of fermented products were produced both from mare's and cow's milk. Among them were koumiss, suorat, sour butter khayakh, umdaan, sour cream, buttermilk with sorrel and berries, etc. Many of them possess high nutritional properties and high acidity which paralyzes the developing of various parasites, decomposers and pathogenic bacteria in the gastrointestinal tract.

G.F. Mueller:

…The Yakuts produce their butter as follows. First they boil cow's milk at slow fire, and then they cool it down, skim the upper skin formed during boiling and put it in a special vessel. This skin, or cream, is frequently stirred, and since the skins are mixed with a great amount of milk, they soon start turning sour. Thus they thicken — this is Yakut butter.
*It reminds you of thick cream, but is rather disgusting because it is mixed with a lot of dirt. When it melts, it looks like Russian butter but has a strong Yakut smell caused by unclean vessels. This butter is favorite Yakut food. If they do not have anything else to eat, they distill the butter with water and eat it. This dish is called umdan. They also cook it with flour and water as porridge. They sometimes mix in ground pine bark, yellow daylight and other roots and eat them with the butter. After butter is skimmed from boiled cow's milk, they ferment it stirring it often enough for it not to get thick. They call it Sor [suorat]. This is their favorite everyday beverage; in summer they store up so much of it that they have enough for the whole winter. When they drink it, they usually add some water to have more of the drink.**

When frosts were severe, or during long journeys, or before undertaking a journey, the Yakuts preferred to eat khayakh, which, in their opinion, like fatty meat, protected you from cold. Hence it follows that it is a high-calorie food and that thanks to lactic fermentation a number of nutritious substances, including vitamins, are accumulated in it

A ninety-six-year-old Yakut beggar

Considering the effect of milk food on the physical condition of the population, the researchers who have been dealing with nutrition studies for many years report that in places with sufficient amount of cattle, where milk products are the main food, the population is characterized by excellent physical fitness.

The effect of milk food in general and fermented milk in particular on human organism and height is highlighted in the Yakut heroic epos *Olonkho*. Meeting Aiyy Khaan on the field of battle for the first time, his opponent, amazed by his enormous height and strong build, exclaimed: "In what country was produced the suorat that made you so broad-shouldered and powerful, and the curdled milk that made you so full-bodied and stately, and the milk food that made you so chubby and plump…?"

In *Olonkho*, when the enemy started overpowering the Yakuts, wounded and exhausted by long and unequal fight, they entreated their protector and chief who lived in the Upper World to grant them strength and save them from imminent death. Then the servants of the old white master Toyon gave them *ilge*, a white clot of divine milk food, which was a healing remedy that brought back force and granted strength and health to the Yakuts. It combined the miraculous nutritious power of milk products with curing plant juices. After swallowing *ilge*, the heroes regained their strengh and turned into powerful athletes ready to repel any attack of the enemy.

Thus, based on centuries-old practical observations, the epos reflected the beneficial effect of milk food on physical development and health of humans. Abundant intake of milk products from early childhood had a positive impact on the physical state of the Yakuts, most of whom in the past were well built, strong and sturdy.

Since the first quarter of the 19th century the growth curve of the Yakuts has been rapidly decreasing. Some 80—90 y. o. people remember how this happened. Thus, if a 90 y. o. grandfather was tall, his 60 y. o. son was of middle height, and a 30 y. o. grandson was short. Or if a grandfather was of middle height, his son was below middle height, and a grandson was short. Doctor N. A. Popov, who worked

Thanks to its availability and easy technology of production, a boiled fermented milk product [suorat, sor, or tar] as a part of milk diet of the population of cattle-breeding regions took almost the first place in the amounts of consumption. It was everyday food not only for the poor and for the people of average means, but also for the most prosperous people. In addition to being consumed in natural form, it was used in cooking various beverages and sour-milk plant soups. The amount of tar and suorat consumed annually was immense

To produce ***suorat***, warm boiled milk was poured in a birch-bark container, and then the necessary amount of ferment was added. When milk turned sour enough, it was put in a chilly place, and then set suorat was poured onto a sieve. Some 8—10 hours later, when the whey trickled down, suorat was taken out of the sieve and put in another container. Before serving, one added some butter, cream and rush, and whipped the mixture with a whisk.

Tar is suorat from skimmed milk, produced in summer and designed for winter consumption. It is characterized by extremely high acidity due to being stored in a cellar for a long time. Tar was stored in large birch-bark casks of 160—240 l capacity. During the first frosty winter days, the Yakuts shaped large containers from snow, which looked like oblong boxes without covers, in the yard near the cellar. The tar was taken out of the cellar in buckets. When the container was full, it was covered with boards. Three or four days later, when the tar froze, the walls of the snow container were removed by a shovel. A block of tar frozen in a snow container weighed about 160 kg

among Yakuts for long, wrote: "I had a chance to observe some Yakut families way back to the fourth generation. There was always the same tendency: tall old men with strong muscles and endurance of the whole organism and short, skinny young people with flabby muscles, fatigable and susceptible to illness. The closer an individual to our days, the weaker."

Their teeth were notably strong and healthy. Most old people even at the age of 90—100 years did not lose their teeth, though they were much worn out. The expedition of the Academy of Sciences stated that "quite often old people at the age of 60 and older had most if not all teeth." It should be noted that carbohydrates were few in the food of the Yakuts; it was frequent drinking of koumiss that prevented the developing of bacterial flora that causes damage to teeth and leads to dental diseases.

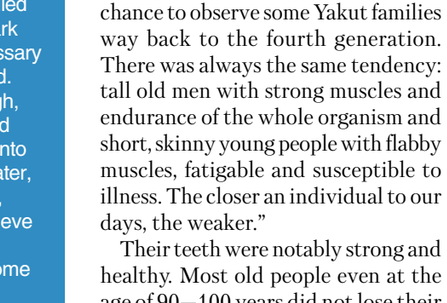
In this respect, it is noteworthy that the Yakuts used to chew larch and pine bast (sapwood) both boiled and fresh, which suggested good work of the masticatory apparatus. In addition, women and teenagers (and sometimes men) often chewed birch pitch and larch turpentine, which was done, according to some evidence, to clean teeth.

It is well-known that the Yakuts often reached very old age. This is confirmed by oral communications of the old, by statistics taken from the registers of birth and by historical legends. In uluses with highly developed cattle breeding, both men and women used to live up to 90—100 years old. They say that until the middle of the 19th centure women often reached the age of 120—130 years old. Quite often the old died as a result of natural insenescence.

All 80—90 y. o. Yakuts state that pulmonary tuberculosis appeared in southern uluses approximately in the 1870s-1880s. Pulmonary tuberculosis of ulus population was not reported by the explorers of the Yakut regions in their detailed studies of Yakuts' everyday life in the 19th century.

It was noticed that most old Yakuts, who had been on sour-milk diet (in particular koumiss) since childhood, had strong immunity to the active form of pulmonary tuberculosis despite unfavorable life conditions and close contacts with sick family members. They remained healthy and died of other diseases or of old age.

The decline in health and in the level of resistivity to tuberculosis is closely related to the radical changes in the diet of the Yakuts, in particular to a break in consumption of sour-milk products that occurred approximately between 1860 and 1910.



Frozen tar

The article is illustrated with pictures reproduced from *Pre-Agriculture Yakut Food. An attempt of a historical-ethnographic monograph* (Yakutsk, Institute for the Humanities of the Academy of Sciences of Sakha (Yakutia) Republic, 2005) by A. A. Savvin. There are also photos of exhibits from the Lena Historical-Architectural Museum-Reserve "Druzhba"

During these 50 years the Yakut economy underwent radical changes. Agriculture became one of the main industries; horse breeding, fishing and hunting reduced; truck cattle breeding became dominant. Commodity consumption increased immeasurably, which resulted in enhanced sales of food — meat and butter — to the newly opened Lena mines. At the same time, production of koumiss, sour butter, tar and other sour milk products, as well as eating of wild plants, berries and roots, ceased. While earlier the food of local population mainly consisted of milk, plant and meat products, now they mainly eat bread and meat food, and surrogate instead of butter. They started consuming tile tea, vodka and tobacco in large amounts. All these factors have ruined the people's health.

In the 19th century, the high content of proteins, fats, vitamins and mineral substances in food was the source of the stamina that, in spite of severe climatic conditions and unfavorable living conditions, made the Yakuts the most vigorous nation in Northern Asia, a nation that had an opportunity for further evolution.

On the whole, diet as a factor of physical development and longevity of any nation has always played an extremely important role.

In the second half of the 19th century, some higher priests striving to inculcate Christianity and arable farming into the Yakuts started fighting against tar eating. Thus, for example, archbishop Yakov urged the Yakuts to give up eating "tar — decomposed, mouldy and absolutely unsuitable food". Indeed, by the end of summer tar was often covered with greenish mould, which together with whey was scooped out and poured out on the earth. Archbishop Yakov, like many others, was unaware of the role of sour milk products as a kind of protective food, and in particular of the nutritious and prophylactic properties of yoghurt Ulus people respected the priest and followed his advice. In the late 19th century, the Yakuts in the most populated southern regions almost completely ceased producing suorat and tar and storing up the latter for winter. They decided that eating these products was a shame. By the early 20th century, the consumption of tar and suorat, except for certain places, reduced approximately by 90%