



## SESSION 4: TO EACH HIS OWN MILK

# QUESTIONS RESPONSES

### with Françoise Sabban

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**1. You are a sinologist, and China is a fascinating country when it comes to milk. First because of the plethora of preconceived ideas. It is often thought that the Chinese do not drink milk or that those who do only discovered it around the end of the 20th century. Yet 25 years ago you published a seminal article: “Le travail du lait en Chine ancienne: un savoir-faire oublié”<sup>1</sup>...[“The Forgotten Dairy Skills of Ancient China”] In it you analyze a body of texts such as treatises on agronomy and cooking. How far back does the oldest text date?**

To the year 535 CE. It is *Qimin Yaoshu*, the oldest Chinese treatise on agriculture, which has been entirely preserved. It includes a chapter on breeding as well as the uses of cow's milk and ewe's milk. And it shows that the Chinese of that period already knew how to ferment milk and make milk into butter, and they knew how to preserve milk by dehydrating fermented milk drained and left in the sun to keep it for several months. Later, under the Tang, it is amusing to cite the biography of a civil servant called Mu Ning: he had four sons whose merits were praised by qualifying them as *lao* (fermented milk), *su* (butter), *tihu* (clarified butter) and *rufu* (fresh curdled cheese) respectively.

**2. In the series of preconceived notions about the Chinese and milk, there is the idea that they are lactose intolerant and don't like milk, and also that soy fulfills the same nutritive function. In reading your work, things don't seem to be that simple?**

Caution is in order with regard to the supposed Chinese distaste for dairy products. First because milk, like human milk, is an element of traditional pharmacopoeia, used basically as a medicine. It was used to make stimulant drinks for the elderly or in digestive teas. It is said for instance that a decoction of cow's milk and long pepper managed to cure Tang emperor Taizong of a serious intestinal disorder. Second, because depending on the region, very different attitudes toward milk and dairy products have been observed, from strong distaste to great interest for this foodstuff, considered as a luxury then. Some better-off segments of the population were familiar with and enjoyed milk and dairy products, to believe certain ancient culinary treatises. As for “soy cheese,” it was not mentioned in Chinese texts until the 10th century CE. Milk and dairy products were known before then and continued to be valued after that, butter especially, described as one of the most valuable foodstuffs there is, be it in *Yinshan Zhengyao*, a treatise that dates from 1330. That said, the question of lactose intolerance among Asian populations remains a real issue. It is manifest to varying degrees, but apparently does not necessarily prevent one from consuming products containing lactose.<sup>2</sup>

**3. Yet, there were periods when the Chinese considered that milk was the food of foreigners, or barbarians. Even better, isn't it surprising that their definition of barbarian with respect to milk is the same one as the ancient Greeks studied by Janick Auberger?**

Indeed, like for the ancient Greeks, what surprised the Chinese was not so much that barbarians consumed dairy products but that they made them their sole means of subsistence and that they carried their gastronomic poverty as far as consuming them raw or plain, without cooking them. In Chinese culinary treatises that mention dairy products, dairy products are integrated in the cooking process: fermented milk is flavored with garlic and used as a sauce, curdled milk is mixed into stuffing, butter is used to flavor pastries. However, it should be noted that recipes of this sort are few and rather uncommon in the vast Chinese culinary repertoire.



Traditional yoghurt drink through a straw on a stall in Beijing. Photo P. Bourgault/Cniel

<sup>1</sup>In Zinbun: Memoirs of the Research Institute for Humanistic Studies, Kyoto University, N° 21, 1986, 31-65

<sup>2</sup>Or dairy products such as cured cheese which contain only traces of lactose or yogurt in which it is predigested by lactic bacteria

**4. If China is fascinating in its relationship to milk, it is also because in recent decades it has become a big dairy producer. How can we explain that ancient China was familiar with milk and forgot it, at least partly, and that today's China has developed milk production and consumption so quickly? With the abuses we know since the contaminated milk scandal that broke out in 2008 just after the Olympic games?**

It should not be forgotten that in ancient times the Chinese had never developed dairy farming on a large scale, even if in the border regions of China there was a dairy breeding tradition among non-Han populations and in the Qing court, the last Chinese dynasty founded by the Manchus, some dairy products were consumed and enjoyed. The standard Chinese diet until very recently was based on mainly starch and primarily made up of cereals such as rice or wheat, accompanied with vegetables and little meat. Cereal crops were at the foundation of this dietary system, specific to traditional agricultural societies, as animal husbandry was fairly undeveloped in the countryside. It wasn't until the reform of the early 1980s and strong political will to create a dairy industry in China virtually from the ground up, though of course not without help from major foreign dairy-producing countries. This is how China has become the world's 4th largest milk producer after the United States, India and Russia, and that milk consumption rose extremely fast, from 1 kg/pc/year in 1975 to over 25 kg today... The whole question for an anthropologist and a historian is what memory is this ultra-rapid development founded on. The answer to this question might enable us to understand incidents such as the contaminated milk scandal, which, I remind you, first affected baby formula and thus milk intended for infants.

**5. You invited Kohmei Wani to retrace the history of milk in Japan, from ancient times to today. Like China, Japan did not wait until the end of the 2nd millennium to discover dairy products?**

Indeed, as Mr. Wani informs us, the oldest written trace of milk in Japan dates back to 700 CE in a text that mentions a tribute to be paid to the emperor in "so," which is very similar to the Chinese "su" in Qimin Yaoshu discussed above, which seems to be a generic term to refer to the fatty matter of milk. Milk, which was introduced to Japan by the Chinese, was used rather as a medicine by the imperial family. It wasn't until Japan's desire to westernize with the Meiji era starting in 1868 that dairy farming was introduced and that liquid milk as well as sweet condensed milk, thanks to technologies imported from the United States, started to enter the Japanese diet as a "medifood," as we might say today, for children and the sick.

**6. It wasn't until after the Second World War that a famished Japan began opening up to western style foods?**

That's relative, because the Japanese remain very attached to their traditional diet based on rice and sea-food, but it is true that they started to adopt new foods – milk, wheat, meat – and new uses, especially after the Second World War. Mr. Wani moreover informs us that overall consumption of milk and dairy products went from 3 kg/pc/year in 1950 to 47 kg in 2000.

**7. Suresh Gokhale describes for us a whole different dairy landscape in India?**

Yes, as Mr. Gokhale says, milk in India has had a particular status for thousands of years: it is both a preferred animal product in the Hindu vegetarian diet and a food that knows no barrier, be it religious, caste-based, cultural or socio-economic. The symbolic importance of milk in India is well known. It is present on a daily basis as well as in many celebrations and rituals, even among fishermen who throw it into the ocean as an offering in the hopes of bringing back a good catch.

**8. Milk in India is also very important from a nutritional standpoint?**

The nutritional content of milk is far from insignificant in a country where a large segment of the population remains poor and rural and lives in practical autarky. Suresh Gokhale explains that the average quantity of milk available per person is currently 250 g per day and can vary between 500 g per day in states such as Haryana and Punjab, and as little as 100 g per day in certain eastern states of India.



India: milking in the country. Photo Suresh Gokhale

**9. What is the nature of India's dairy economy today? At the time of Independence and even afterward, milk was reserved for home consumption and selling milk or dairy products was considered a sin in certain villages...**

The public authorities and government agencies had to pool their efforts to convince breeders of the importance of milk in the fight against malnutrition and to organize the collection and processing of milk. These efforts paid off because production went from 59 million tons in 1992 to 106 million in 2005 and it could reach 220 million in 2020. About 2/3 of the production is not processed, but is consumed by the family on the farm or sold in the form of unpasteurized fresh milk in informal channels. Cooperatives and industries process 37 % of the milk produce and process it into nearly 70 traditional dairy products classified into 7 main categories.

**10. Traditional Indian dairy products seem to be very successful?**

Yes, this is the segment that is developing the fastest on the domestic market and even beyond the country's borders. There seem to be flourishing perspectives for ethnic Indian dairy products, particularly "traditional Indian milk delicacies," in the United States and Canada. As Suresh Gokhale points out, the manufacturing of these traditional milk-based desserts has evolved considerably and now is grounded in scientific knowledge.

**11. Milk in other developing countries is dealt with by Giuseppe Licitra, a specialist on tropical and sub-tropical agriculture, from the angle of food safety and the role of women. But he doesn't mean food safety in the same sense as it is generally used in industrialized countries ...**

Yes, in developing countries, food safety means simply having something to eat every day. For Giuseppe Licitra, women are the "invisible actors of development," and they play a key role in their family's food safety. The processing of milk into fermented milk and cheese is done above all in order to preserve milk in warm climates. It first serves to feed the family, and then women sell the little bit left over – rarely more than 10 liters of milk per day – on the local market, which provides them with a little cash to make essential purchases.

**12. Giuseppe Licitra has studied 134 traditional dairy products in the world, which he classifies by region, type of coagulation, by product family and length of preservation. What are the most common methods used to make milk curdle?**

First by acid coagulation: lactic acid in 33% of cases, in 45% of cases if alcohol ferments are added, such as with Central Asian *kefir* and *koumis*, and fermentation by heat. Then, animal rennet (23% of cheeses), or vegetable rennet (only 2% of cases).

**13. Tell us about the life span of dairy products and the preservation methods used.**

Dairy product life span varies from 0 to 15 days to over a year. About one-third of dairy products are salted. This is the case for the Egyptian cheese *Rasshr*. In 6 out of 10 cases, types of fermentation are combined with heating techniques or sun drying. For instance, *Wagashi* cheese in Benin, which is clotted using latex from *Calotropis procera*, (the "apple of Sodom"), is re-cooked every other day and keeps for about a month. Another example is *Trachanas*, a traditional dairy product from Cyprus that combines wheat flour and fermented goat's milk cooked together and then dried in the sun and cut up into patties sometimes served with lemon and garlic. Dehydration by sun drying, which was used in several cultural areas, is a common process to increase the duration that cheese will keep. Giuseppe Licitra gives us the examples of *Lalika* in Morocco, *Gashi* in Mali, *Gapal* in Burkina Faso, *Takumart* in Niger, the latter two which he says can be kept for several years. A wide variety of spices are also used in preservation. And so is sugar, as we have seen in India.

**14. So safety – in the health sense this time – is not limited to the question of raw milk?**

Giuseppe Licitra sees food hygiene safety as being the result of a complex interaction of a series of factors. This approach has finally been recognized by the US Food and Drug Administration (FDA) as "equivalent to pasteurization" in controlling pathogens. The challenge to researchers and manufacturers of traditional cheeses in developing countries is to understand the multiplicity of practices and demonstrate their effectiveness scientifically. And by putting food hygiene safety in a more global ethical and political context of cultural and social recognition of women, the rural communities to which they belong and their cheese-making knowledge, both biodiversity and a population with the means to subsist on their land can be maintained. What Giuseppe Licitra advocates is the "feminization of agriculture" to combat the "feminization of poverty."



Cooking Wagashi cheese. Photo G. Licitra



**15. Another debate regarding developing countries, particularly in Africa, is the competition imposed by imported milk powder on local milk. This is discussed by Djiby Dia, geographer and researcher at the Office of Macroeconomic Analysis at the Senegalese Institute of Agricultural Research. What is the situation in West Africa in this regard?**

Milk in West Africa is a foodstuff that has strong identity connotations and which finds itself at the heart of changes in traditional society. Local milk mainly comes from extensive herds that value natural pasturelands and partly from semi-intensive and even intensive periurban farms. Its contribution to the Senegalese economy is significant, with a production of 120 million liters, 84% of which is cow's milk. Milk remains an essential component of the pastoralist diet but also a source of income for the breeders who have a regular outlet for their production (up to 80 % of their income). However, milk powder imports to West Africa have more than doubled in the past 10 years. In 2007, Senegal imported 40,000 tons of milk powder.

**16. How is this milk powder used?**

Consumed directly, it is a foodstuff that attracts young city-dwellers in particular who have new food demands and new eating habits and for whom the taste of local milk has lost its appeal. Milk powder is especially used by the dairy processing industry and increasingly by small-scale dairies, due to a lack of regular supply of local milk.

**17. Does imported milk powder, which is cheaper, pose a threat to local production?**

According to Djiby Dia, the powdered milk boom seems to follow in step with the development of the local milk market, even stimulate it. The rising demand of cities has spawned new trades and new activities: delivery carriers, collection centers, small processing industries and the like. Brands of dairy products made from milk powder make reference to tradition in their advertising, indirectly promoting local milk. Local milk has an image of quality among a portion of the consumers and some processors opt for local milk to position themselves in quality segments. The management of local milk quality at the production and processing level is thus an essential factor of competitiveness that has enabled many producers and industrials to compete with imports.



Djiby Dia

**18. Senegalese consumers thus have a choice between local milk and milk powder?**

Today, the urban African culture feeds on both, according to Djiby Dia, while stipulating that the preservation of cultural values in the context of a market economy is a question that local actors must take seriously.