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Milk, Yogurt and Butter in Medieval East Asia: Dairy Products from China to Japan in Medicine and Buddhism

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Abstract: Dairy products have existed in China from at least the Han Dynasty onward. Later, under the influence of Buddhism, dairy items such as yogurt, butter and ghee were required for ritual purposes. The domestic dairy industry in medieval China is an understudied topic, but even more so is the use of dairy in contemporary Japan, where Chinese traditions of Buddhism were transplanted in full. The *kanji* describing various dairy products were also known in Japan, but we must ask whether these substances were available in Japan, and to what extent. Unlike luxury consumables such as aromatics and medicines, perishable foodstuffs were unlikely to have been transported from the mainland. This study will document and discuss the transmission of a dairy industry from China to Japan, with a focus on the role of these products in religious and medical contexts.

Keywords: Buddhism; dairy; yogurt; materia medica; China; Japan; Daoism



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1. Introduction

The consumption of milk products is very ancient on both sides of the Eurasian continent. Orlando (2018, p. 12084) notes that “the people who practiced dairy pastoralism in Mongolia ~33,000 y ago were mainly local in origin and not of western Eurasian steppe pastoralist descent”. Dairy was also known to early Chinese civilization. Huang (2002, p. 809) states that “oracle-bone and bronze inscriptions suggest that the collecting of milk from cows and mares was not an unfamiliar art during the Shang Dynasty (ca. 1520–1030 b.c.)”. We might ask the extent to which dairy was consumed not only in China in later centuries—particularly during the first millennium CE—but also whether contemporary Japan had a comparable industry. Buddhism, medicine, astronomy and the Chinese script were transmitted from the mainland to Japan, but what about cattle rearing and the production of dairy products?

The role of dairy in premodern China is slowly becoming recognized today, despite some past preconceived notions that peoples in East Asia seldom enjoyed milk and cheese until the twentieth century. Miranda Brown recently published a study of a text from 1504 that includes a recipe for cheese-stuffed pasta by a certain Mr. Song. The use of cheese in Chinese culture, particularly in premodern periods, is generally not recognized today by historians of food. Brown (2019, p. 38) points out the significance of this as follows: “Besides suggesting a long career for cheese in sixteenth century southern China, the case of Mr. Song calls attention to the need for a broader reevaluation of the history of dairy in China as a whole. Precious little is known about the place of milk products in China, their historical roots, their development and dissemination, and even their recent resurgence. The lack of knowledge on the topic owes less to the paucity of surviving sources than to long-standing biases by researchers.”

The role of food in East Asian Buddhism is also increasingly a topic under study. Toleno (2017), for instance, points out the significance of congee as a cross-cultural item within social history. Building on these important studies, the present paper will first survey the role of dairy in medieval China, and then examine its introduction from China into Japan as an underappreciated example of material culture between the two countries

in the premodern period. Dairy products, I argue, constituted a significant transfer of material culture for two reasons. First, dairy was treated as a valuable form of medicine, a fact that is reflected in the contemporary materia medica literature. It was primarily, but not exclusively, the medical aspect of dairy, rather than culinary, that prompted its transmission to Japan. This transmission, I will emphasize, occurred under the supervision of the state, rather than it being a popular phenomenon. Second, dairy was part of the ritual apparatus of Buddhism. Although this study will demonstrate that dairy was transmitted to Japan largely as a type of medicine, I argue that we must also recognize the religious function of dairy in Buddhist rituals which attempted to emulate Indian culinary conventions. I will further point out the value in utilizing a diverse array of primary sources, from state codes and materia medica to Buddhist commentaries, when evaluating the consumption of a commodity in premodern East Asia.

2. Types of Dairy in China

There are several different types of dairy products in the Classical Chinese lexicon. The classical work of Chinese lexicography, *Shuowen jiezi* 說文解字 (*Explanation of Writing and Interpretation of Characters*), compiled by Xu Shen 許慎 in 100 CE, defines *lao* 酪 as “thick fluid [from] milk 乳漿也 (14b, p. 22)”. This should correspond to soured milk or yogurt. The *Han shu* (Book of the Han Dynasty) in its description of *Hu ren* 胡人 (nomadic peoples in the northwestern regions) states that they “eat meat and drink *lao* 食肉飲酪 (49, p. 2285)”. *Lao* was therefore watery in substance, rather than having been strained or pressed. The subsequent entry listed by Xu Shen is *hu* 醐. This is further designated as the binomial *tihu* 醍醐, which is defined as the fine part of *lao* (醍醐酪之精者也). Pulleyblank (1962, p. 255) compares *tihu* to Mongol *čige(n)* (kumiss) and concludes that “the assumption of a common borrowing from Hsiung-nu [Xiongnu 匈奴] seems to be the best way to account for this”. The substance *su* 酥, which is often written as *su* 蘇, generally corresponds to butter or edibles similar to butter, as we will explore below. *Su you* 酥油 is butter oil.

These definitions of dairy items changed over time, but we need to exercise caution because they were also used to translate foreign words. The Chinese used words from their existing lexicon as functional equivalents for Indian dairy items, particularly within Buddhist contexts, even though, in reality, the correspondences were only approximate. The *Fanyu zaming* 梵語雜名 (*Assorted Words of the Sanskrit Language*), which was compiled by Liyan 禮言 at some point during the Tang period, and then transported to Japan by Ennin 圓仁 (794–864) in 847, gives Siddham readings (here, rendered into Latin script) and phonetic transcriptions in Chinese for three separate dairy products.¹

<i>su</i> 蘇	伽里二合多	(<i>gia li^x ta</i>)	<i>ghṛta</i>
<i>lao</i> 酪	娜地	(<i>na^x di^H</i>)	<i>dadhi</i>
<i>ru</i> 乳	吉史羅	(<i>ki^l ʃi^x la</i>) ²	<i>kṣīra</i> ³ [<i>*kṣīra</i>]

According to Monier-Williams (1899), *ghṛta* is ghee or “clarified butter or butter which has been boiled gently and allowed to cool (p. 378)”. *Dadhi* is “coagulated milk, thick sour milk (p. 468)”. *Kṣīra*, which ought to be *kṣīra*, is “milk, thickened milk (p. 329)”. It is noteworthy that the aforementioned *tihu* is not in the above list, although the word does appear in Chinese translations of Buddhist literature and, based on the context, we can infer that it refers to refined ghee, which in Indian thought was often considered to be the foremost flavor. The *Dasheng liqu liu boluomiduo jing* 大乘理趣六波羅蜜多經 (*Sūtra of the Purport of the Māhāyāna and Six Perfections*), translated by Prajñā (Bore 般若) in 788, figuratively compares the different stages of refining dairy to the five canons:

此五法藏，譬如乳，酪，生酥，熟酥，及妙醍醐。契經如乳，調伏如酪，對法教者如彼生酥，大乘般若猶如熟酥，總持門者譬如醍醐。醍醐之味，乳酪酥中，微妙第一，能除諸病，令諸有情身心安樂。

² Reconstructed Middle Chinese pronunciations from Pulleyblank (extracted from database on Wiktionary).

³ T 2135, 54: p. 1231c8-14.

These five canons of the Dharma are like milk, yogurt, fresh butter, aged butter, and fine ghee. The *sūtras* are like milk, the *vinaya* (monastic codes) is like yogurt, the teachings of Abhidharma are like fresh butter, the *prajñā* of the Mahāyāna is like aged butter, and the practice of *dhāraṇī* is like ghee. The flavor of ghee is finest among milk, yogurt and butter. It removes illness and makes sentient beings at ease in body and mind.⁴

The Buddhist lexicon by Huilin 慧琳 (738–820), the *Yiqie yin yi* 一切經音義 (*Comprehensive Pronunciations and Meanings in Sūtras*), specifically defines some vocabulary from this *sūtra*. He writes, “*Tihu* is the fat in butter. The finest is called *tihu*. It cures various illnesses 醍醐者酥中之膏, 至清者名曰醍醐, 能治衆病”.⁵ This is evidently a different understanding of the word than what it meant during the Han Dynasty, when it referred to kumiss or a related consumable. In this case, the word took on a new meaning in the process of Indian literature being translated into Chinese.

3. Dairy in Chinese Materia Medica and Buddhism

Huilin’s knowledge about medicinal qualities in this context parallels what we observe in the medical literature of the Tang period. Dairy products are described in Chinese materia medica. The *Xinxiu bencao* 新修本草 (*Revised Pharmacopeia*), compiled by Su Jing 蘇敬 (599–674) in 659, provides the following entry with running commentary (the commentary indicated with bold font below):

醍醐 味甘, 平, 無毒。主風邪痺氣, 通潤骨髓。可為摩藥, 性冷利, 功優於酥, 生酥中。此酥之精液也。好酥一石有三四升醍醐。熟杵煉, 貯器中待凝, 穿中至底便津出得之。

Tihu: It is sweet in flavor. Neutral. Non-toxic. It is used for pathogenic influences and numb *qi*. It nourishes bone marrow and can be used as a topical medication. It is by nature cold and sharp. It is superior in efficacy to butter, being produced from the butter. **This is the extracted fluid from butter. One shi (59.7 liters) of good butter has three or four sheng (1.79–2.38 liters) of tihu.**⁶ **Mature and process [the butter] through churning and melting, and store in a vessel until it congeals. Poke a hole to the bottom and retrieve what oozes out.** (15, p. 8)

The use of dairy is also seen in medical texts from the Daoist canon. *Ge Xianwen zhouhou beiji fang* 葛仙翁肘後備急方 (*Ge Xianwen’s Convenient Emergency Therapies*) provides the following prescription:

又治一切肺病, 咳嗽, 膿血不止: 好酥五斤, 熔三遍停, 取凝當出醍醐, 罌一合差。

To remedy all illnesses of the lungs, coughs, and when pus and blood do not cease: melt five *jin* (3.304 kg) of good butter three times until it settles and congeals, from which *tihu* will emerge. Then with one *he* (59.7 mL), one will be cured.⁷

This work is attributed to Ge Hong 葛洪 (c. 283–c. 343), but it was supplemented with further material by later authors, such as Tao Hongjing 陶弘景 (456–536). It is impossible to distinguish between the content of the different authors (Hu 1995, p. 350). Nevertheless, we can infer from the above example that substances like ghee were already used before the Tang period, and that Daoists also utilized it. This point also indicates that a dairy industry, in fact, existed to some extent in China during these early centuries which could supply milk.

Looking to the Buddhist context, dairy was a component within ritual performances that sought to emulate Indian practices. This knowledge of the Indian use of dairy is clear in the commentary to the *Vairocanañbhisaṃbodhi*, which was compiled by Yixing 一行 (673–727) on the basis of an oral testimony by Śubhakarasiṃha 善無畏 (637–735), with additional comments by Yixing, after this pair translated the original *sūtra* in 724.⁸ The relevant remarks explain the types of offerings mention in a specific set of verses.

乳糜者, 西方粥有多種, 或以烏麻汁, 或以諸豆并諸藥味, 如《十誦藥法》等文廣明。然最以乳糜為上。凡獻食時, 當更加以蘇沙糖等, 令色味兼具而先奉之也。又西方飯有多種, 亦以酪飯為上。獻此食時, 應配以沙糖鹽薑諸味。又當奉羹依彼方造食之。

法, 或隨國俗所用也。歡喜丸, 應以蘇煮諸餅, 糝以衆味及三種辛藥等, 令種種莊嚴。漫荼迦是此方薄餅。其葉餅是天竺餅法。以糖蜜諸味和麵, 蘇油煮之, 至為甘美。

“Milk porridge”: the western lands have many types of congee. Some take it with black sesame broth, others take it with beans and various medicines and flavorings, as is extensively explained in the medical procedures in the *Ten Recitations* [Vinaya of the Sarvāstivāda], etc., but milk porridge is regarded as best. When offering food, you should further add things such as butter and granulated sugar, fully furnishing color and flavor before serving it. Also, the western lands have many types of boiled rice, and yogurt rice is regarded as best. When offering this food, you should mix in various flavors like granulated sugar, salt and ginger. Also, you should follow the way of making food in those lands when offering soup, or otherwise do it according to the common customs of the country. Dainties (**modaka*) should be made as biscuits cooked in butter, and rolled in various flavors and the three types of pungent medicines (**kaṭu-bhaiṣajya*), and then presented with diverse decorations.⁹ A *maṇḍaka* is a thin flat biscuit here [in China]. The leaf biscuit is a way of making biscuits in India. They mix sugar, honey and various flavors with flour and boil these in butter oil.¹⁰ It is quite delicious.¹¹

This explanation is interesting since it demonstrates an awareness of Indian dishes and confectionaries, which are further compared to Chinese cuisine. The travelogue of the monk Xuanzang 玄奘 (602–664), who left China for India in 627–629 and returned in 645, briefly mentions similar foods which are frequently consumed in India: milk, yogurt, fat (ghee), butter, granulated sugar, rock sugar, mustard oil, and grains in the form of breads and grits.¹² The monk Hyecho 慧超 (b. 704) from Silla on the Korean peninsula, who visited India and Inner Asia before returning to China in 727, also records that Indians consume grains, breads, grits, butter, milk and yogurt in his travelogue, titled *Wang o cheonchukguk jeon* 往五天竺國傳 (*Memoir of a Pilgrimage to the Five Indian Kingdoms*).¹³ It is reasonable to assume that some monasteries in China attempted to replicate Indian foodstuffs in order to retain a sense of authenticity and adherence to prescriptions in the *sūtras*, although I am unaware of archaeological or other evidence that would directly prove that monasteries in the Tang, for instance, were regularly consuming dairy. There would have been an impetus to consume dairy as part of the Vinaya program at least in some institutions.

Dairy features in the various compendia of Vinaya in Chinese. Śubhakarasiṃha and Yixing mention the *Sarvāstivāda-vinaya* (*Shisong lü* 十誦律).¹⁴ Therein we see butter as part of the typical “seven-day prescription” (*Qiri yao* 七日藥), which are a set of rich foods a monk may consume when ill regardless of the normal dietary regulations.¹⁵ The Vinaya of the Mahāsāṃghika school defines the seven-day prescription as consisting of “butter, oil, honey, rock honey, fat, and fresh butter 酥, 油, 蜜, 石蜜, 脂, 生酥”. Here, “butter” is defined as “the butter of cows and water buffalos, the butter of black ewes and wild goats, and the butter of camels 牛水牛酥, 羖羊羖羊酥, 駱駝酥”.¹⁶

The Chinese tradition of Vinaya studies was aware of this prescription. The monk Daoxuan 道宣 (596–667) in his commentary on the Vinaya of the Dharmaguptaka school (*Sifen lü* 四分律) writes, “The seven-day prescription [according to] the Dharmaguptaka comprise five things which are known to people in the world: butter, oil, fresh butter, honey, and rock honey 七日藥者, 四分: 酥, 油, 生酥, 蜜, 石蜜等, 五種世人所識”.¹⁷ Although we have such commentaries by Chinese authors, it is uncertain to me whether they themselves had regular access to dairy foods.¹⁸

Dairy products were also a necessary ingredient in recipes for magical suffumigations in some Buddhist works. The *Daweili Wushusemo mingwang jing* 大威力烏樞瑟摩明王經 (*Sūtra of the Vidyārāja of Great Power Uccuṣma*) translated by Ajitasena (Azhidaxian 阿質達戩) sometime between 713 and 741, for example, explains the following act:

若安悉香和酥蜜酪, 進火中一百八遍, 當家飲食穀麥無竭。

If you mix *guggulu* together with butter, honey and yogurt, and offer it in the fire 108 times, the household will have inexhaustible drink, food and grains (T 1227, 21: p. 156b21–22)¹⁹

The use of dairy is indispensable in this context. Anyone seeking to perform this ritual required the exact ingredients. This was not a *pro forma* procedure that could be altered according to the local availability of gourmet foodstuffs, but rather the spell required the specific substances. The use of dairy in suffumigations within the Buddhist context, therefore, was arguably another factor which encouraged the production and consumption of dairy in China.

Yet, it is curious that the travelogue by the Japanese monk Ennin, titled *Nittō guhō junrei kōki* 入唐求法巡禮行記 (*Record of a Pilgrimage to China in Search of the Dharma*), does not mention dairy items, even though Ennin often mentions what types of food he consumed day to day. He travelled to China between 838 and 847. The absence of references to dairy could possibly mean that it was observed and taken for granted, but Ennin never mentions consuming it. Ennin took his meals at monasteries or at the homes of benefactors, so we might tentatively infer that dairy was not consumed as a regular food. The fact that dairy features in the medical literature, as surveyed above, would strongly indicate that Ennin's counterparts in China generally considered dairy primarily as medicine, but not as a common foodstuff.

The extant recipes and procedures for the production of dairy products in China, of which I am aware, date to later centuries, but we might speculate that similar methods were utilized in earlier centuries. The *Bencao gangmu* 本草綱目 (*Compendium of Materia Medica*), for instance, compiled by Li Shizhen 李時珍 (1518–1593) and published in 1596, cites various texts from earlier periods. In the section on dairy, Li Shizhen cites a certain *Yao Xian shenying shu* 耀仙神隱書 (*Book of Divine Secrets by Sage Yao*), which is not extant.²⁰ These milk cakes described therein appear to be comparable to paneer:

造乳餅法，以牛乳一斗，絹濾入釜，煎五沸水解之，用醋點入如豆腐法，漸漸結成，漉出以帛裹之，用石壓成，入鹽甕底收之。

To make milk cakes, filter one *dou* (5.97 liters) of cow's milk with thick silk into a kettle, and then boil for five [double-hours (ten hours)] until the water is evaporated. Add a bit of vinegar, like how tofu is made, and it will gradually congeal, and then strain out the liquid with silk. Use a stone and press. Store under salt in an earthen jar. (j. 50b, p. 38)

The *Kangxi zidian* 康熙字典 (*Kangxi Dictionary*) of 1716 also cites the same work and records the instructions for the production of butter oil (j. 30, p. 100):

以乳入釜煎二三沸，傾入盆冷定，待面結皮，取皮再煎，油出去滓，入鍋即成酥油。

Add milk to a kettle and boil for two to three [double-hours (four to six hours)]. Tip into a pan, let cool and settle. Wait for skin to form on the surface and then remove it and recook it. Remove the oil from the dregs. Add [the oil] to a pot and it becomes butter oil.²¹

4. Dairy in Japan in Relation to China and India

The *Shinsen Shōjiroku* 新撰姓氏錄 (*New Compilation of the Register of Families*; p. 191), compiled in 815 by Manda Shinnō 萬多親王 (788–830), records the first known account of milk being introduced into Japan. Zenna 善那, whose father, Chisō 智聰, had hailed from Wu 吳 (China), offered the Kōtoku Tennō 孝德天皇 (r. 645–654) milk (*gyūnyū* 牛乳). He was granted the title of *Yamato no kusushi no omi* 和藥使主 ("Commissioner of Medicine in Yamato").²² Researchers have shown that dairy was generally treated as a medicine (*kusuri* 藥) from this period until only after World War II in Japan (Takagi and Yoda 2017, p. 59; Hosono 2009, p. 213). The *Engi shiki* 延喜式 (*Procedures of the Engi Era*) of 927, which records various religious and legal procedures, lists a profession titled *chichi no chōjō* 乳長上, the "Overseer of Milk" (*maki* 12, p. 20) as part of the Bureau of Medicine (*Tenyaku ryō* 典藥寮). This confirms the modern scholarly conclusion that milk was largely considered medicinal

in premodern Japan. Elsewhere (*maki* 23, pp. 18–21), the codes explain the provisioning of butter to the court (*kō so* 貢蘇) from regional centers. Ise 伊勢, for example, was to offer eighteen jars. The fact that this is butter and not milk (which would have quickly spoiled if transported to the capital) is worth mentioning, since it shows that these regions produced and also processed dairy products locally. Satō (2012, pp. 48–55) points out records in various sources from the Nara period of milk being formally offered, such as inscribed wooden tablets (Jp. *mokkan* 木簡) unearthed from the Heijō Palace (*Heijō-kyū* 平城宮), and also the use of milk in Buddhist contexts. This carried on into the Heian period. Satō also points out that the *Wamyō ruijū shō* 倭名類聚抄, a Japanese dictionary compiled around the year 934 by Minamoto no Shitagō 源順 (911–983), gives the indigenous Japanese name for *nyūroku* 乳酪 (yogurt) as 迺字能可遊. This would read *nyū no kayu* (“porridge of milk”). The fact that an indigenous name for this item existed shows that it, in fact, existed in Japan.

Another section (*maki* 37, pp. 12–13) of the *Engi shiki* describes the milking and handling of dairy cows (*nyūgyū* 乳牛). The production of butter is briefly described (*maki* 23, p. 21): “To make butter, boil one *do* (5.97 liters) of milk to get one *shō* (0.597 liter) of butter 作蘇之法, 乳大一斗煎, 得蘇大一升”.²³ Unfortunately, there are no further details given about how to produce the butter.

As Japanese scholars have already noted, dairy seemingly became unavailable after the Heian period. This differed from China, where dairy was still consumed in some regions. During the time when dairy was actively produced throughout Japan, we know that Buddhist institutions had access to these products, since they appear in historical accounts and ritual manuals.²⁴

We might ask, however, what did Buddhist clerics do when dairy was unavailable? The Chinese commentary to the *Vairocanaṅbhisaṃbodhi* discussed earlier mentions a number of Indian foods alongside dairy. These would have been difficult to produce or replicate in Japan. We can look to the writings of the Shingon monk Yūhan 宥範 (1270–1352) to gain an idea about how this issue was addressed in monasteries. Yūhan offers the following remarks regarding the foodstuffs mentioned in the commentary to *Vairocanaṅbhisaṃbodhi*:

皆是天竺所有餅也, 非此方所有, 但此方所有希饌上味珍好餅菓, 盡心求之, 至誠獻之, 故云如是諸希饌乃至上味及珍妙菓, 隨意獻之也。其白糖石蜜等者。經所說塞茶石蜜乃至乳酪淨牛味等, 或此方所有或此方所無, 如此等諸珍味漿等亦盡心可獻之也。故云其白糖石蜜乃至鮮夭折之患也, 鮮猶少也無也。

These [aforementioned items] are all biscuits in India, and they are not available here, but we adamantly seek out the rare dishes, fine flavors, and precious biscuits and fruits available here, and then with utmost sincerity offer them. Hence, [the commentary] states, “Various rare dishes as well as fine flavors and precious fruits are offered as one wishes. They are white sugar, rock honey, etc”. The *sūtra* mentions *khaṇḍa* (candy), rock honey, as well as pure dairy flavors of milk and yogurt. Some of these are available here, while some are not. These types of precious flavors and liquids also ought to be adamantly offered. Hence it is said, “white sugar and rock honey . . . few suffer premature death”. “Few” means little or none.²⁵

We might imagine the dairy products by Yūhan’s time had taken on a largely symbolic function for many Buddhists. Monks might not have ever seen yogurt or butter in their lifetimes, but they certainly were exposed to the numerous references to these items in Buddhist literature. Milk porridge, we might recall, was famously offered to the Buddha before his awakening (Toleno 2017, p. 130), but this would have been a foreign dish that could only be imagined for many Buddhists in Japan after the demise of the local dairy industry. Yūhan, following the commentary, pointed out that one could make an effort to find the best offerings available locally. This therefore required making substitutes and seeking out whatever fine foods were available locally. The magical suffumigations mentioned earlier, however, would not have been possible—at least when executed according to the letter of the text—without dairy, but it remains uncertain to me what substitutes were used.

5. Dairy as a Health Food

The last remark of Yūhan above is in reference to a line in the commentary to the *Vairocanaṅbhisambodhi*, which is particularly pertinent to our discussion. The commentary reads:

其食乳酪，亦用畢撥或龍腦等，如醫明食法為之。大抵西方造食及飲噉先後次第，多依藥術，有養性防身之功故，多盡其天年，鮮夭死之患也。

When consuming milk and yogurt, one also uses *pippalī* (long pepper), *karpūra* (camphor), etc., and prepares everything according to the dietary guidelines of medical science (*cikitsā-vidyā*). Most western countries in preparing food and drink, as well as the order in which they eat things, do so mostly according to medical arts, since this is efficacious in nourishing vitality and protecting the body. Most live out their natural lifespan and few suffer premature death.²⁶

This is likely the voice of Śubhakarasiṃha. The claim that a prescribed Indian diet—which contained many dairy products—could fortify longevity would have been well received by readers already familiar with the materia medica literature surveyed above.

It is furthermore possible that some degree of Indian dietary medicine involving dairy had already been introduced into China by the early Tang. The mixing of long pepper and milk as a cure for dysentery is attested in the compendium by Li Shizhen, but this remedy was apparently already used when treating Emperor Taizong 太宗 (r. 626–649):

《唐太宗實錄》云：貞觀中，上以氣痢久未痊，服名醫藥不應，因詔訪求其方，有術士進黃牛乳煎葦芡方，御用有效。劉禹錫亦記其事。

The *True Record of Taizong of the Tang* states that during the Zhenguan reign era (627–649), his eminence did not recover from dysentery for a long time. He took the medicines of famous physicians, but to no effect, and so he ordered that someone be sought from elsewhere. A mystic healer provided a remedy of yellow cow's milk boiled with long pepper. The emperor took it and it was effective. Liu Yuxi also records this event. (j. 14, p. 46)

According to a separate article on milk, “the remedy uses half a *jin* (330.4 grams) of cow's milk and three long pepper corns, which are boiled together until reduced to half quantity. It is then consumed on an empty stomach 其方用牛乳半觔，葦芡三錢，同煎減半，空腹頓服 (j. 50b, p. 6)”²⁷ Whether this account is historically true or not is perhaps debatable, but nevertheless it does suggest that a concoction of milk and long pepper was perhaps used as a medicine during the Tang period. In light of the fact that long pepper was imported from abroad, and because Śubhakarasiṃha also mentions a similar consumable, we might suspect that this remedy was derived from foreign sources. In fact, this recipe is also attested in classical Āyurvedic literature. The *Cikitsāṅgraha* of Cakradatta (p. 61) states, “The paste of *pippalī* or *marica* taken with milk removes dysentery, even chronic, in three days”.²⁸ As Ariga (1994, pp. 18–19) demonstrates, medical literature from China, which in some cases dealt with dairy products, was available in Japan, particularly from the Nara period onward. In light of this fact, Japanese physicians would have been well aware of the Chinese use of dairy in curative elixirs, which, by extension, was related to the preservation of long-term health and longevity.

6. Conclusions

This study has attempted to demonstrate the importance of dairy as an example of a transfer of material culture from China to Japan in the medieval period. It is evident that we must consider the utilization of dairy products not only in materia medica, but also in Buddhist and Daoist literatures. As Brown has emphasized, the historical presence and consumption of dairy products in East Asia is insufficiently recognized in modern scholarship. This observation applies not only to historical gastronomy, but also to the study of Asian religions.

The underlying motivation to consume dairy in medieval East Asia was in large part for its health benefits and its use in specific medical prescriptions, yet there was also an interest among Buddhists in replicating the cuisine of India, particularly in ritual contexts. Dairy was also part of the Indian monastic codes governing monastic diets. In addition, dairy sometimes was included as a necessary ingredient—and one that could not be substituted—in recipes for magical suffumigations in Buddhist rituals. Dairy items also served a symbolic function in Buddhist literature.

There clearly existed numerous factors which encouraged the spread of dairy culture from China to Japan. Initially the use of milk for its medicinal properties was sanctioned and encouraged by the Japanese state. We might identify this as an aspect of Sinification, meaning that knowledge of the raising of cattle and also the production of dairy reflected continental culture, which the Japanese state sought to emulate. Aristocrats in Japan were also likely interested in the potential health benefits of dairy, which no doubt facilitated the development of a dairy industry throughout the Nara and Heian periods. On the other hand, Buddhist clerics were likely more interested in remaining authentic to ritual prescriptions that originated from Indian, rather than Chinese, sources, albeit in translation. In this sense, the medical and religious aspects of dairy culture in Japan demonstrate two simultaneous movements to reproduce dairy culture as it existed elsewhere in the world, with the subsequent result being a burgeoning dairy industry across Japan that supplied the demand from aristocrats and clerics alike. Yet, it was, it seems, the collapse of aristocratic control that led to the end of the dairy industry in Japan toward the late Heian period, a point that demonstrates how an element within the economy was shaped and sustained primarily by the aristocracy, only to vanish, even when Buddhist clerics also desired dairy products.

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Notes

- ¹ See the record of items brought to Japan by Ennin: T 2167, 55: p. 1086c10.
- ² Reconstructed Middle Chinese pronunciations from Pulleyblank (extracted from database on Wiktionary).
- ³ T 2135, 54: p. 1231c8-14.
- ⁴ T 261, 8: p. 868c13-17.
- ⁵ T 2128, 54: p. 576b2.
- ⁶ Measurements based on table in [Togawa et al. \(2011, p. 1742\)](#). 1 *sheng* 升 in the Tang period was 0.597 liters. 1 *shi* 石 is equal to 100 *sheng*.
- ⁷ DZ 1306, 33: p46a17-19. Measurements (here assuming the standard measurements of the Tang period) based on table in [Togawa et al. \(2011, p. 1742\)](#).
- ⁸ The traditionally attributed authorship to the commentary to the *Vairocanaśābhisambodhi* was challenged by Osabe Kazuo 長部和雄 (b. 1907) based on the often-challenging chronology of bibliographical data on this text in premodern Japanese and Chinese bibliographies, as well as the apparent absence of references to the commentary in Chinese sources. Japanese scholars in recent decades, however, do not accept this thesis and point to the multiple voices within the text. See discussion in [Kotyky \(2017a, pp. 30–31\)](#). [Goble \(2019, pp. 19–20\)](#) expressed doubts regarding the traditional authorship. He writes, “All told, evidence suggests that the *Commentary* postdates the lives of Śubhākarasiṃha and Yixing and is possibly a Japanese product.” [Kotyky \(2020\)](#) argues this is a highly problematic position for various reasons. The aforementioned lexicon by Huilin, for example, cites the commentary (T 2128, 54: p. 353b23-c1). It seems that the commentary, at least in its earliest preserved recension (other recensions display later editorial revisions) was compiled by Yixing on the basis of the oral explanation of Śubhakarasiṃha. This reality is

further evident in the section of the commentary dealing with astrology, which incorporates the calendrical theory of Yixing (Koty 2018, pp. 12–14).

⁹ *Xin yao* 辛藥 literally means pungent medicine. The corresponding Sanskrit term is *kaṭu-bhaiṣajya* (“pungent medicine”) in Hirakawa’s Sanskrit–English dictionary (Hirakawa 1997, p. 1139). The *Fanyu qianziwen* 梵語千字文 (*Sanskrit in a Thousand Words*) gives *modaya* for *xituan* 喜團 (T 2133a, 54: p. 1192a15–16). The ingredients which go into another version of “dainties” (*huanxi wan* 歡喜丸) are given in the *Mahāparinirvāṇa-sūtra* (*Daban niepan jin* 大般涅槃經 T 374): butter, flour, honey, ginger, black pepper, long pepper, grapes, *akṣoṭa* (walnuts), pomegranate seeds, and what appears to be acorns. T 374, 12: p. 595c26–28.

¹⁰ This sweet was likely similar to jalebi, which is produced in the same manner today.

¹¹ T 1796, 39: p. 658c13–22. For the original verses, see T 848, 18: p. 10c21–23.

¹² T 2087, 51: p. 878a28–29.

¹³ T 2089, 51: p. 975c5–6.

¹⁴ See translation and comments in Toleno (2017, pp. 144–45; 2015, p. 193).

¹⁵ T 1435, 23: p. 405c6.

¹⁶ T 1425, 22: p. 244c13–15.

¹⁷ T 1804, 40: p. 118b20–21.

¹⁸ We need to be aware that the numerous rules of the Vinaya were only sporadically observed in China. Daoxuan himself cited unnamed critics who outright rejected the “precepts of the Hīnayāna” in favor of the Mahāyāna bodhisattva precepts. The Vinaya was associated with the Hīnayāna, and so many evidently thought it unnecessary for a Mahāyāna bodhisattva to adhere to the precepts of the Vinaya. See Koty (2017b, p. 514).

¹⁹ Here, *anxi xiang* 安悉香 refers to *guggulu* (bdellium) in the Indian context, although it can also refer to *styrax benzoin* in medical literature. The *Da foding guangju tuoluoni jing* 大佛頂廣聚陀羅尼經 (*Extensive Dhāraṇīs of the Great Buddha Uṣṇīṣa*), produced by an unknown translator during the Tang period, defines *anxi-xiang* as *jujuluo* 婁具羅, i.e., *guggulu* (T 946, 19: p. 173a25). Monier-Williams (1899, p. 356) defines *guggulu* as “bdellium or the exudation of *Amyris Agallochum*.” A later form of *anxi-xiang* was imported from Southeast Asia, which was *styrax benzoin*. Yamada (1976, p. 131) notes the different Thai and Sumatran species.

²⁰ The full title given in the *Ming shi* 明史 (j. 98, p. 2432), the dynastic history of the Ming completed in 1739, is *Ning Xianwang Yao Xian shenying shu* 寧獻王姚仙神隱書 (*Book of Divine Secrets by Sage Yao, Ning Xianwang*) in four fascicles (*si juan* 四卷). Ning Xianwang 寧獻王 was another name for Zhu Quan 朱權 (1378–1448). This work is listed among those of agriculturalists (*nong jia* 農家), so we can infer that its content dealt with the production of foodstuffs.

²¹ This process might be further compared to the traditional preindustrial production of ghee in India. Note the significant difference in production methods. George Watt’s *A Dictionary of the Economic Products of India* (Watt 1890, p. 491) provides the following description: “Fresh milk is boiled on a slow fire for five or six hours being occasionally stirred with an iron spoon to prevent its boiling over. The fuel used is cowdung cake which gives out a moderate heat. The milk gradually assumes a red brown colour and a thick crust is formed on the surface after which it is taken down and allowed to cool. It is then transferred to a separate earthen vessel and a small quantity of whey introduced which in about 12 h causes the milk to coagulate and turn into pure curd. This curd is transferred to a large earthen or metallic vessel and a quantity of water added for the purpose of reducing it to a liquid state to facilitate churning. It is then churned by a churning staff as long as it continues to yield butter.”

²² Satō (2012, p. 53) points out that in a separate source, Zenna is named Fukujō 福常.

²³ Measurements based on table in Togawa et al. (2011, p. 1742). Here, I am using the imported Chinese measurements from the Sui–Tang period for ease of reference. The formula in any case is one portion of butter is derived from ten portion of milk. There are ten *shō/sheng* 升 in one *to/dou* 斗.

²⁴ For instance, Satō (2012, pp. 50–51) points to the Shingon Mikkyō compendium titled *Kakuzen shō* 覺禪抄, compiled by 覺禪 (1143–?) around the year 1217, which in one instance requires mixing “the five grains, butter, honey, milk and yogurt 五穀蘇蜜乳酪.”

²⁵ T 2213, 58: 310c21–c28.

²⁶ T 1796, 39: p. 659a7–10. Read *bibo* 畢撥 as *biba* 萆芡 (*pippalī*). See Nakamura (Nakamura 1975, p. 1139).

²⁷ Measurements based on table in Togawa et al. (2011, p. 1742). One *jin* 觔 (*jin* 斤) is equal to sixteen *liang* 兩. During the Tang period, one *liang* was equal to 41.3 grams, hence $41.3 \times 16 = 660.8$. $660.8/2 = 330.4$.

²⁸ *Marica* (or *marīca*) is black pepper (Monier-Williams 1899, p. 790).

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