

# Distillation and Distilleries in Mongol Yuan China

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You smell the fragrant and get off your horse,  
you know about the taste and hold on your boat.<sup>1</sup>

酒以成禮

To drink in order to satisfy rites<sup>2</sup>

酒以為人合歡，故不為量，但以醉為節而不及亂耳

Alcohol is for man's happiness, so there should not be a limit, but one should control oneself so as not to be drunk, in order not to distort one's behaviour.<sup>3</sup>

## Alcohol in Mongol Society

It is well known that alcohol played a major role among the early Mongols. The drinking of simple *kumiss* (Turkish name) or *airag* (Mongolian name), a low alcoholic drink (between 1 and 3 per cent) made by fermenting horse or camel milk, has to be mentioned, for example, and was part and parcel of the Mongols' every-day-life. It is also important to emphasize that alcohol was one of the few luxury products available to the aristocracy and was consequently closely linked to social hierarchies. "(F)ood quality was a by-product of the social hierarchy, for which the example of alcoholic beverages is especially outstanding", as Luo Feng 羅豐 explains.<sup>4</sup> The preparation of a special black or clarified *kumiss*, for example, had been entrusted to a particular tribe since Genghis Khan's (r. 1206–1227) time. After the introduction of distillation technology, which also helped to preserve a perishable drink, each privileged social class was permitted to enjoy the *kumiss* whose distilled quality matched their social status.<sup>5</sup> The best and purest qualities were reserved for those with the highest social status.

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1 Old proverb describing the vicinity of the Lidu distillery, when travellers passed by; traced back to Wang Anshi 王安石 (1021–1086) and Yanshu 晏殊 (991–1055).

2 Liu Yiqing 劉義慶 (403–444), *Shishuo xinyu* 世說新語 2.12.

3 Zhu Xi 朱熹 (1130–1200), *Lunyu jizhu* 論語集注, in his commentary to *Lunyu* 10.8.

4 F. Luo 2012, 515.

5 F. Luo 2012, 515f.

Offering good quality *kumiss* to one's guests during the repeated feasts organised by Mongols was, in addition, also a reflection of the importance the host assigned to a guest. It was not only an expression of social status. The Mongols thus developed their own drinking culture as part of traditional ceremonies. For very highly esteemed guests special cups, such as silver cups, were used. As Luo Feng has shown, stills like the bronze still (*tongniang jiuguo* 酒鍋) unearthed in 1983 at Shi'erduan 十二段 Village, Longchang Township, from Bairin Left Banner 巴林左旗, Inner Mongolia (figs. 1, 2), or the bronze still discovered 1975 at Xishanzuo 西山嘴 Village, Qinglong County (fig. 3), were especially useful and more than adequate to produce pure and high quality distilled *kumiss*. The coolant water in the container at the top (condenser) allowed more steam to be condensed, and the spout permitted the heated water to be drained off easily. In addition, the combination of a dome-shaped top with a convex bottom and the circular gutter facilitated a thorough collection of the distillate (see Fig. 3, for example).



Fig. 1 Bronze still from Bairin  
(from Luo Xin 2008, 66, fig. 1)



Fig. 2 Assemblage of the still and iron tripod from Bairin  
(from Luo Xin 2008, 75, fig. 9)

To produce large quantities of lower quality distilled *kumiss* to supply all ordinary households, the Mongols certainly used other types of stills that could

produce large volumes and satisfy “the demands of mass consumption”.<sup>6</sup> And the specific drinking culture of the Mongols led to the situation where “every household makes liquor and every person drinks greedily – the Mongols drink like bulls without break. They get toweringly inebriated and sober up suddenly, no matter whether it is day or night.”<sup>7</sup>

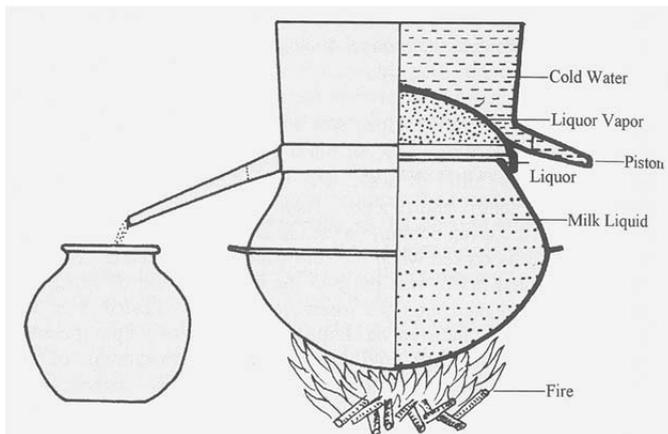


Fig. 3 Reconstruction of the workflow of a bronze still unearthed from Qinglong County (from Luo Xin 2008, 69, fig. 5)

## Origins of Distilled Alcohol

As to the origins of distilled liquors in China, there exists much controversy.<sup>8</sup> It stems from two seemingly contradictory accounts by Li Shizhen 李時珍 (1518–1593), provided in his famous *Bencao gangmu* 本草綱目 (Outline of *Materia Medica*). On the one hand, Li Shizhen clearly traces the origins of distillation back to the Yuan period, stating that

the making of burnt-wine was not an ancient art. The technique (*fa* 法) was first developed in Yuan times.<sup>9</sup>

However, a little bit further in the same chapter, he describes the nature of grape wine as follows:

6 F. Luo 2012, 518.

7 F. Luo 2012, 516f.

8 Huang 2000, 204.

9 *Bencao gangmu*, 25.1567: 燒酒非古法也。自元時始創其法。

There are, in fact, two sorts of grape wine, that obtained by fermentation, which has an elegant taste, and that made like *shaojiu* 燒酒, which has a powerful poisonous effect (*dadu* 大毒). [...] In the distillation method, many thousands of cattles of grapes are first treated with the great ferment (*daqu* 大麴), such as used to make vinegar, and then put into a steamer and steamed. A receiver (*qi* 器) is used to collect the distillate (*dilu* 滴露). This is a beautiful pink colour. Anciently, such brandy was made in the Western regions (Xiyu 西域). It was only when Gaochang 高昌 (i. e. Turfan) was captured (i. e. 640) during the Tang period (618–906) that this technique was obtained.”<sup>10</sup>

This second entry would mean that the art of distillation was already known in China during the seventh century. These two statements clearly contradict one another. We possess also other references to “burnt wine” (*shaojiu*) stemming from the Tang and Song periods. The technology to prepare perfumed water by steam distillation was known under the Song, too.<sup>11</sup> Huang Hsing-tung (Huang Xingzong) 黃興宗 concludes that “the capability for carrying out a distillation has probably existed in China in the alchemical community since the +3rd century” and was well known as a process in Tang times.<sup>12</sup>

From the evidence we possess, we may conclude that the basics of the process of distillation was already known among alchemists, doctors, and pharmacologists since some time before the Tang dynasty, but the art of distilling still remained largely a secret. During Tang and Song, small quantities of “burnt-wine” were produced but its distribution remained restricted to narrow élite circles. Only during the late Song and early Yuan period it does make sense to speak of breakthroughs in distillation technology and production.<sup>13</sup>

The first reliable evidence for spirit distillation and detailed descriptions of the process date to the Yuan dynasty<sup>14</sup> but the practice of utilizing alcohol to make medicinal tinctures is definitely older than spirit distillation. It is important to emphasize that in the old world distilling had multiple inventions and developed in Egypt, India and China with differing technologies more or less independently. Distillation technologies spread rapidly across the Silk

10 *Bencao gangmu*, 25.1568: 葡萄酒有二樣：釀成者味佳，有如燒酒法者有大毒。[...] 燒者，取葡萄數十斤，同大曲釀酢，取入甌蒸之，以器承其滴露，紅色可愛。古者西域造之，唐時破高昌，始得其法。

11 H. T. Huang 2000, 205.

12 H. T. Huang 2000, 207, 208.

13 H. T. Huang 2000, 229.

14 See also Höllmann 2010, 95.

Roads during the Mongol period, a period that was crucial in terms of technology transfer between East and West.

Thomas Höllmann states that there is “good reason to believe that China adopted the earlier-known distillation methods from West Asia, because the terms *alaji* and *yalaji*, which appeared at that time, derive from the Arabian word ‘*araq* (“sweat”), which has survived to the present.”<sup>15</sup> The term “*alaji*”, a Turkic form, was nonetheless a Yuan application and possibly influenced by the “Southern barbarian” term “*alaji*” (see below), a more direct borrowing. In any case, it is certainly significant that one form of the word is purely Arabic and the other Turkicized. In addition, with the different technologies described, more or less the only way to interpret this are the supposition of multiple inventions and a back and forth borrowing across the Silk Roads. But it was definitely the Mongols who generalized the word, whatever its ultimate derivation. The *Yinshan zhengyao* 飲膳正要 (Proper and Essential Things for the Emperor’s Food and Drink) by Hu Sihui 忽思慧 (fl. 1314–1330), for example, presented to the Mongol court in China in 1330<sup>16</sup>, refers to what is apparently a sorghum distilled liquor, and to a brandy called *alaji* / *arajbi* (“the dew that is obtained during the vaporization of good alcohol is called ‘*alaji*’”). This is the first occurrence of the term in any form in any source. A slightly later source, the *Jujia biyong shilei quanji* 居家必用事類全集 (Essential arts and assorted techniques for family living; early Ming), contains a foreign recipe entitled *Nanfan shaojiu fa* 南番燒酒法 (Burnt-wine method of the Southern barbarians). The entry states that the foreign name of this spirit is “*aliqu jiu*” 阿里乞酒 (Fig. 4) and describes a rudimentary still of an Arab retort type suggesting a Western derivation for at least this recipe:

“Burnt-wine method of the Southern barbarians”

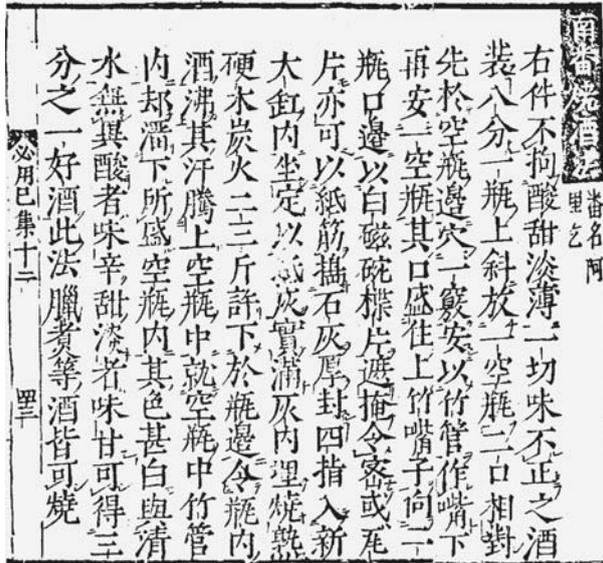
(*Nanfan shaojiu fa* 南番燒酒法)

Take any kind of substandard wine [...] and pour it into a pot until it is about 80 per cent full. Place another pot on top of the first one, with the two mouths facing each other at a slight angle. Bore a hole on the side of the empty bottle and attach to it a hollow bamboo tube to act as a drain pipe. The other end of the pipe is placed in the mouth of a second empty pot which acts as a receiver. Fill the space around the mouths of the two pots with pieces of porcelain or pottery and then seal with a lute made of a mixture of paper fibre and lime [so that the still will be airtight]. The low-

15 Höllmann 2010, 96.

16 Buell, Anderson 2010.

er bottle is firmly set on a large urn filled with the ashes of burnt paper. Place two to three catties of hot, burning charcoal in the ashes around the bottle. The wine in the bottle soon begins to boil. The vapour rises into the empty bottle and condenses along its sides. The condensate flows into the bamboo tube and is collected in the receiver. The product is colourless just like pure water.<sup>17</sup>



4 *Jujia biyong shilei quanji* 12.42b-43a: “Nanfan shaojiu fa”

Useful as it might have been, Huang Hsing-tsung suggests<sup>18</sup> that this primitive still was probably not of much use to Chinese distillers who made their distilled wines and spirits from heating a fermented mash and rarely used finished wines, as suggested was the case in the passage above, but Mongol distillers may still have used it. Nonetheless, Yuan period stills used to steam fermented mash were either of the “vase” or *hu* 壺 type, or of a “pot” or *guo* 鍋 type, derived from traditional Chinese steamers. They were not related to the Arab-style retorts.<sup>19</sup>

The *Jujia biyong shilei quanji* even provides a detailed description of another type of distillation (using a Mongolian-type still, as identified by Needham), to produce a kind of tincture but still a beverage. The description contains interesting references to the use of herbal materials in a very Chinese way:

17 Translation from H. T. Huang 2000, 227.

18 H. T. Huang 2000, 229.

19 Ibid.

“Cooked” Liquor (*zhujiu* 煮酒)

Whenever one cooks liquor, use 2 *qian* of wax, 5 slices of bamboo leaf, and “official” *Arisaema japonica*, a fine half a kernel for each *tou*. Transform and put into the liquor. Close up tightly according to method. Place inside a boiler. ([subtext] During autumn and winter use an *Arisaema japonica* “pill.” During spring and summer use wax and bamboo leaves). After that start the fire. Wait until the aroma of the liquor penetrates up into the boiler twists [of the apparatus]. The liquor will come forth in profusion. Then raise the boiler again. Then take up the entire pot [with the liquor], open up and look. If the liquor is boiling then it is ready. Put into the fire for a long time. When you take it down put it into lime. One should not move continuously. One wants the white liquor to expel to obtain the clear [distilled] liquor. Afterwards when cooking again and again, use mulberry leaves to repose. This is to prevent the aroma *qi* [vapour] from being cut off.<sup>20</sup>

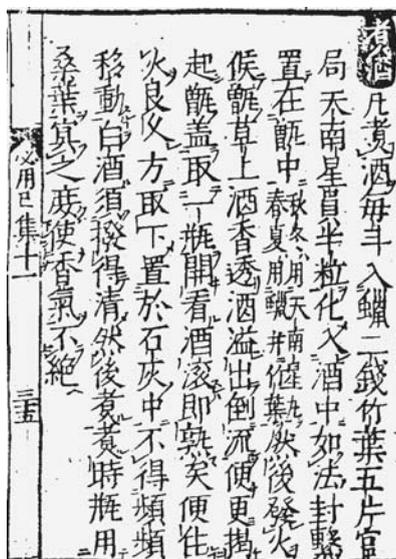


Fig. 5 *Jujia biyong shilei quanji* 12.35a: *zhujiu* 煮酒

The Mongols liked to drink alcohol and alcoholism became epidemic in Mongolian society. Marco Polo (1254–1324) records that

The people of Cathay [...] make a drink of rice and an assortment of excellent spices, prepared in such a way that it is better to drink than any other wine, because it is very heating.<sup>21</sup>

<sup>20</sup> *Jujia biyong shilei quanji* 11.35 (250).

<sup>21</sup> Adshead 2000, 228, with reference to Marco Polo.

As Hyunhee Park explains in this issue, Chang Chihyŏn is convinced that the *arajbi* / *arak* wine that began to appear in Yuan dynasty documents was in fact based on milk fermentation. And the Chinese simply imitated the Mongol distilled liquors and began to make distilled liquors using their traditional brewing materials calling it *shaojiu* to distinguish the new products from Mongol *arajbi*.<sup>22</sup> Definitely, it was during the Yuan period that large-scale distillation of alcohol began. By late Song or early Yuan times a major breakthrough in the technology of wine distillation took place, a breakthrough that for the first time made distilled wine

an affordable article of commerce. It was then produced and consumed on a larger scale than hitherto. In other words, distilled spirit was invented during the Han, developed through the Tang and Sung, and reached fruition as a commercial success during the Yuan.<sup>23</sup>

Against this background, it may not surprise us that the first archaeological evidence for larger distilleries dates from the Mongol Yuan period.

### **Distilleries and their Administration under the Yuan**

To meet all the Yuan court's needs, the Mongol rulers established an elaborate production and supply system for food and drink. The Yuan had a Palace Provisions Commission (Xuanhui yuan 宣徽院) that directed twenty-eight subordinate agencies. William of Rubruck (c. 1220–c. 1293) records that Khan Mōngke (r. 1251–1259) in his time held two great drinking festivals at Karakorum annually.<sup>24</sup> Such feasts or drinking ceremonies became a kind of grand ritual during the Yuan.

After the Song dynasty we encounter larger-scale breweries. Before that time, the distillation of alcohol was probably carried out privately and on a small scale in individual households. Large-scale distilling probably first emerged in the north of China, as a response to the needs of the Mongol conquerors, as Samuel Adrian M. Adshead suggests.<sup>25</sup> Later even fortified distilleries (*shaofang* 燒坊) emerged in Manchuria as a feature of Chinese colonial society.<sup>26</sup>

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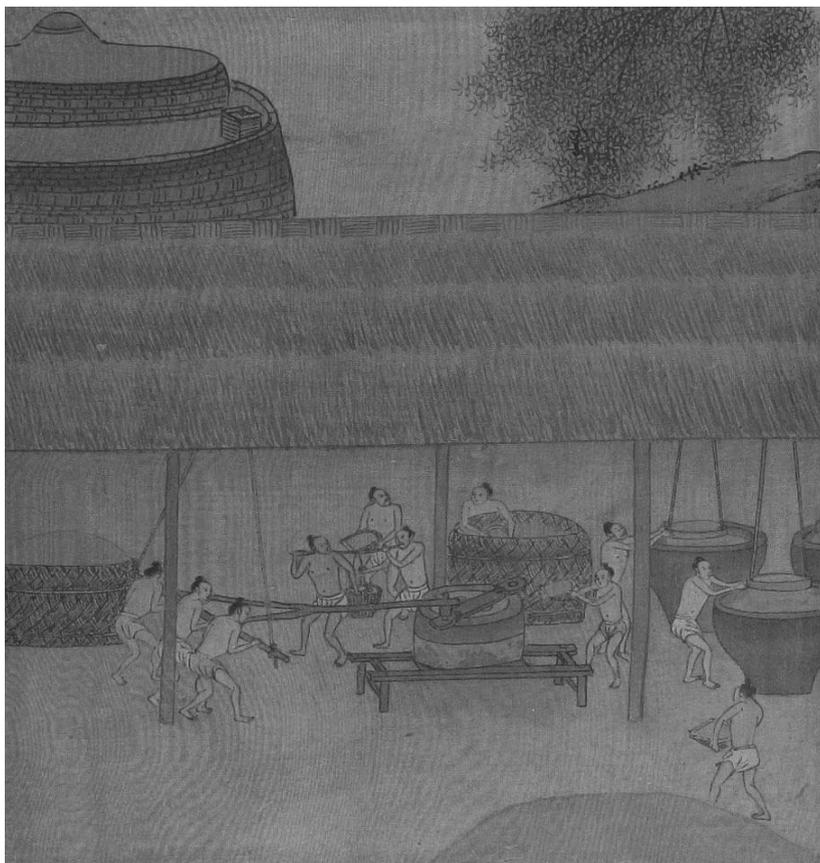
22 Park in this issue with reference to Chang Chihyŏn 1989, 47–60.

23 H. T. Huang 2000, 229.

24 Allsen 1997, 54.

25 Adshead 2000, 228.

26 Ibid.



6 Workers grinding and sieving,  
likely grinding and sieving clay at a kiln workshop,  
but possibly also grinding grain (?)<sup>27</sup>

With growing cities and expanded market systems in the late Song and Yuan dynasties, production sites for spirits and wine came to resemble larger factories more than household workshops. Generally speaking can we date the origins of large-scale production sites and workshops into the late Song to early Yuan, a scenario that became an integral part of every-day life and society during the Ming dynasty (Fig 6).

27 Traditional Attribution to Qiu Ying 仇英. (c. 1495–1551/1552) Chinese, 17th–19th century; Album leaf; ink and colors on silk 28.5 x 26 cm (11.25 x 10.25 inch). Reproduced with courtesy of the Harvard Art Museums / Arthur M. Sackler Museum, Gift of Dr. Denman W. Ross, 1929.237.

In 1231–1232, the government established so-called “Alcohol and Vinegar Bureaus” (*jiucu wu* 酒醋務) throughout North China. They were supervised by production site or workshop officials (*fangchang guan* 坊場官) who were responsible for the production and sale of alcoholic beverages and had to collect taxes on them.<sup>28</sup> The alcohol monopoly of the government, thus, theoretically involved both the production and distribution of wines and spirits. Between 1234 and 1235, the government launched a series of decrees prohibiting the private manufacture of liquor, yeast, and vinegar. But, as can readily be imagined, a complete control of private distillation was almost impossible. As a consequence, the monopoly underwent various changes in the course of the dynasty’s rule. Sometimes, private distillation was permitted in certain areas while prohibited in others.

In the summer of 1261, the illegal and secret production of alcohol and yeast was put under severe penalties countrywide. The sale of spirits and wines specially manufactured for the entertainment of government envoys was forbidden. When the Mongols conquered the Southern Song, their alcohol monopoly was introduced in the south as well. “Red-seal registers” (*chili* 赤歷) were created to record the amount of grain mash to be steamed each month, the amount of yeast to be used, the quantity of pure liquor that was produced, as well as the selling price. The government authorities took a certain amount of the profit as a kind of tax.<sup>29</sup>

The control was very strict, as we can see. Investigations brought to light that “there are many rich and powerful people who have established liquor warehouses. They use their power to ignore the [government] tax quota to be collected. They produce as much liquor as they desire, sell it, and collect a profit.”<sup>30</sup> In 1279, the government, thus, repeated its strict control and prohibition of a private distillation of alcohol, but the monopoly gradually began to weaken.

In 1285, the government, probably as a reaction to the impossibility of completely interdicting private distilling and inspired by a memorial of the official Lu Shirong 盧世榮 (d. 1285), changed the monopolization system once again: the government reaffirmed its monopoly but at the same time permitted private production of alcohol in towns and villages in exchange for a tax payment. Soon thereafter, in late 1285, Lu Shirong was executed, and the alcohol monopoly was

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28 The terminology of the liquor monopoly is entirely derived from Northern Song times, as Schurmann emphasizes. See Schurmann 1956, 204.

29 Schurmann 1956, 204–205.

30 Schurmann 1956, 205.

abolished. Whereas previously the government had controlled the whole distillation process itself – had provided grain and yeast, labour and capital, produced the spirits and wines and then sold the products on the markets – the alcohol-producing households now had to provide their own labour and capital, the responsible authorities then took a percentage of the output and sold it.<sup>31</sup>

A partial reintroduction of the alcohol monopoly was probably initiated in 1304/05:

In the 8th year of Dade, the Alcohol Supervising Commission (*jiuke tiju si* 酒課提舉司) for Dadu 大都 [*i. e.* the capital] established 100 distilleries (*caofang* 槽坊). In the 9th year, they were merged into three distilleries. The daily amount to be distilled was not permitted to exceed twenty-five *shi*. In the 10th year, three more [distiller-ies] were established. In the 3rd year of Zhida (1310), numbers were increased to 54. [...] There existed nine distilleries from which successive courts granted the taxes [to be paid on alcohol] to various princes, princesses and temples.<sup>32</sup>

### The Lidu 李渡 Distillery

In 2002, a 700-years old spirit distillery was discovered in an ancient township south of Nanchang 南昌, Lidu 李渡, Jiangxi Province – that has been ranked as one of the top ten archaeological discoveries by the UNESCO World Heritage Centre.<sup>33</sup> In total, the site covers an area of 15,000 m<sup>2</sup> of which 350 had been excavated until 2003, as also Dagmar Schäfer notes in her introduction.<sup>34</sup> Archaeologists unearthed a total of eleven cultural levels, spanning six time periods from the later Southern Song through the Yuan, Ming and Qing period down to the Republican era and modern times. The relics of the late Southern Song period are mainly residential. The origins of the distillery itself have been dated back to the Yuan dynasty. Schäfer has already addressed the development of liquor steamers and steel pans, as evidenced from this site.<sup>35</sup>

This relatively recent discovery has provided the first sound material evidence proving the conclusion of Li Shizhen referred to above, namely that large-scale distilled spirit production originated in the Yuan dynasty. The site

31 Schurmann 1956, 206.

32 *Yuanshi*

94.23b-24a:

大德八年，大都酒課提舉司設槽房一百所。九年，併為三十所，每所一日所醞，不許過二十五石之上。十年，復增三所。至大三年，又增為五十四所。

33 [www.unesco.org/ehp/heritarelists/5520](http://www.unesco.org/ehp/heritarelists/5520) (accessed Jan. 5, 2017).

34 Fu Jinquan 2003, 95.

35 See Schäfer, above, 137.

provides important material evidence for further study of large-scale alcohol distillation in state-run or private workshops or manufactures.

Over 300 items dating from the Southern Song Dynasty (1127–1279) to the Ming Dynasty (1368–1644), including seventy exquisite ceramic drinking vessels, have been excavated.<sup>36</sup> Water wells were found that were first constructed during the Yuan period (2.46 m deep). On top of the Yuan well structure, Ming, Qing and early Republican levels were built, up to the height of the brick walls of 4.14 m.<sup>37</sup> As is the case with beer brewing, the quality of the water used for the distillation process is essential; high-quality water is “the blood of *jiu*”.

The distillery is located close to the Yangzi River – a location that was certainly important for transportation purposes, and the various wells probably provided it with good-quality water. The Lidu site distillery remains one of the famous distilleries in modern China.<sup>38</sup>

It is located in a region, the larger Jiangnan area that was flourishing during Song and Yuan times and still today is famous for its *shaojiu*. The website of the modern Lidu distillery briefly introduces the discovery of the historical site and the Yuan period wine pits.<sup>39</sup> In these pits, archaeologists have found bacteria colonies approximately 700 years old. These bacteria are “living fossils” and their genetic evidence suggests that the distillation of alcohol for drinking purposes is not a very old technique but has to be traced back to approximately late Song, early Yuan times.<sup>40</sup> Fan Changsheng and Yang Jun consider the distillery to be an early Yuan period official state distillery, or at least one that received official approval and a license and had to pay a fixed amount of taxes on its output.<sup>41</sup> The tax revenue on alcohol constituted an important asset for the Yuan government’s “wine” monopoly policy, the revenue mounting to 58,640 silver *ding* 錠 and 49 *liang* 兩 in Jiangxi Province alone.<sup>42</sup>

Towards the end of the Yuan dynasty, due to climate shifts towards cooler temperatures – to what some historians have called the “Little Ice Age” – due to floods, inundations and droughts and other natural disasters, agricultural out-

36 [www.chinadaily.com.cn/en/doc/2003-10/20/content\\_273693.htm](http://www.chinadaily.com.cn/en/doc/2003-10/20/content_273693.htm) (accessed December 10, 2016).

37 Fan Changsheng and Yang Jun 2004, 73.

38 See [www.lidujiu.com/detail.php?id=8](http://www.lidujiu.com/detail.php?id=8) (accessed December 12, 2016).

39 [www.lidujiu.com/detail.php?id=8](http://www.lidujiu.com/detail.php?id=8) (accessed December 12, 2016). The website also shows a portrait of Li Shizhen and introduces the entry on *shaojiu* from his *Bencao gangmu*.

40 Fan Changsheng and Yang Jun 2004, 76.

41 Fan Changsheng and Yang Jun 2004, 77.

42 *Yuanshi* 94.24b.

put decreased. Not enough grain and rice was being produced to support alcohol distillation. The heyday of the Lidu distillery during Yuan times, consequently, was early to middle Yuan times, in other words, roughly the period between the late thirteenth and the early fourteenth centuries.

Given this background, it is not surprising that other distilleries have been discovered whose earliest production may be traced back to Yuan or early Ming times – for example the cellar-based cluster of the *Luzhou laojiao daqu jiu* 廬州老窖大曲酒 distillery located in Southeast Sichuan. Its production obviously started around 1324; its stills are comprised of 1619 cellars, spread over a surface area of approximately 40 km<sup>2</sup> in Luzhou City. Most cellars have managed to maintain their authenticity to the present day.

Mention should also be made of another Sichuan site, the Shuijingjie 水井街 Workshop from Jinjiang 錦江, Chengdu 成都 City, which also dates back to late Yuan or early Ming times.<sup>43</sup> Relics that have so far been excavated include three air-curing terraces, eight *bodegas* or cellars, four cooking pits, four ash pits and some other relics, such as a distillatory base, a roadbed, a wood column, etc.<sup>44</sup>

It is well known that since Song times (rice) wines and spirits were also exported, along with ceramics and porcelain wine cups and jars. As various Southern Song period sources suggest, not few wealthy households and farmers who could afford it produced “wines” or spirits for sale, and this to such an extent that local authorities started to complain about the use of highly-glutinous rice for spirit distillation by preference, rather than more commonly available rice with less gluten.<sup>45</sup> In this context, sources from Fujian, for example, the local gazeteer *Quanzhou fuzhi* 泉州府志, speak explicitly about the production of *shaojiu*.<sup>46</sup> And ceramics, many of them jars, or vase-like containers, etc., that were or could be used for the storage of alcoholic beverages, and were produced close-by in Fujian and at Jingdezhen, were exported in great quantities through the port of Quanzhou. We do, of course, not know to what extent locally distilled spirits

43 The website of the modern distillery Shui Jing Fang ([www.shuijingfang.com](http://www.shuijingfang.com), accessed January 03, 2017) explains: “The legend dates back to 1408, when distilling master Wang 大师] set off to find the ideal place to develop his masterpiece. Searching for the best grain and water source for his recipe, he travelled across China and eventually came to Chengdu, an area known as ‘the land of abundance’. Chengdu’s year-round temperate climate, abundant rainfall, rich harvests, and green mountains running with clear and sweet water persuaded him to settle down. He dug a well at the confluence of two rivers and established Shuijing Distillery 王大师在成都老东门大桥外两河交汇之处凿井开坊，创建了自己的酿酒作坊.]”

44 See [whc.unesco.org/en/tentativelists/5320](http://whc.unesco.org/en/tentativelists/5320).

45 Schottenhammer 2002, 172-175.

46 Schottenhammer 2002, 173, with reference to the *Quanzhou fuzhi* 3.44a.

may also have been shipped overseas – but a thorough analysis of contemporary shipwrecks or other sites containing ceramic containers with the appropriate marks may provide us with more details in the future. Customers were widely spread across Asia.<sup>47</sup> In any case the location of the distillery along the Yangzi River, an important transportation artery, constituted an ideal precondition for the shipment of its products to well-known port cities, such as Quanzhou, Fuzhou, Xiamen or the like.

Already in pre-Ming times, the development of Jingdezhen's famous blue-and-white porcelain was made possible by the import of cobalt from Iran, "known to the Chinese as 'Muslim blue'".<sup>48</sup> Production in Jingdezhen possibly started, facilitated by Mongol policy, from around 1340.<sup>49</sup> One of a series of blue-and-white wine stem bowls unearthed from Jingdezhen bears an inscription in Persian script around the outside of the mouth that most probably was written by a Persian-educated writer.<sup>50</sup> A cautious translation of the decipherable part is provided. The text seems to have been something like a homage to wine drinking:

...has fallen in a wine cup  
 ...the lily...has fallen in water  
 ...the intoxicated narcissus [or 'whoever is intoxicated']  
 ....that is ruined [or, if a reference to wine, 'who has been overcome by wine']<sup>51</sup>

Drinking vessels suited to the drinking culture of the Mongols followed them around Eurasia. The majority of Yuan period ceramics excavated from the historical Lidu distillery, were dark glazed cups and bowls. A brown drinking cup is also portrayed on a mural in a Yuan period tomb discovered in September 2014 west of Luogetai 羅坨台 Village, in Hengshan 橫山 County, Yulin 榆林 City, Shaanxi. Probably what is a vase filled with wine, somewhat resembling a small still of the "vase" type, is depicted in a bright, whitish colour with a brownish-red decorated bottom, perhaps an underglaze red floral pattern (? see Fig. 7). At any rate, the "vase"-type occurred mainly in Hebei and Northeast China, while the "pot"-type was found in other parts of China, for example, in the famous distilleries of Shanxi, Sichuan, Guizhou or Xinjiang.<sup>52</sup>

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47 Schottenhammer 2002, 173f.

48 von Glahn 2016, 284.

49 McCausland 2014, 216.

50 McCausland 2014, 218.

51 Ibid.

52 H. T. Huang 217.



Fig. 7 Scenery from murals in the above mentioned Yuan period tomb in Hengshan Xian (Photo provided by and reprinted with courtesy of the Shaanxi Archaeological Museum)

## Conclusion

The origins of large-scale manufacture of distilled alcoholic beverages can definitely be traced back to the Yuan dynasty. This development reflects not simply economic, commercial and technological processes but also socio-cultural changes. Large-scale production of consumer goods – for both domestic customers and foreign demands – can already be traced back to the Southern Song. In this context, some probably privately-run distilleries already existed in Southern Song China, particularly in the commercially highly-developed Southeast. Around this time, distilled wines and spirits started to be produced in workshops of different sizes both by wealthy households, merchants and village communities, including for exportation abroad – a result of the increasingly commercialized economy, especially in the larger cities and in southeastern coastal regions.

Finally large-scale state-run and private distilleries emerged during the Yuan dynasty. To understand this development we also have to take the specific role of distilled alcohol in Mongol society, culture and tradition into consideration. Especially the Mongol ruling elite asked for a well-distributed network of distilleries that manufactured high-quality distilled *kumiss* and other distilled alcoholic beverages. The wide-spread custom of alcohol drinking required a network of workshops and production sites for mass consumption also among commoners. In this context, we can observe that, while other formerly luxury products had become staple products or at least become available for a much larger circle of customers already in the course of the Song dynasty, the consumption of distilled alcoholic beverages – while still a luxury product in its purest and best qualities – metamorphosed into a product of daily use only in Yuan China.

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