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Tea Planting in Song Dynasty: Focusing on Soil and Environment

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Abstract:

Tea culture has a long history in China, and planting is the first step to establishing the quality of tea. The ancient Chinese people had their ideas about the terrain, climate, soil, and other conditions of tea cultivation, so the records of each region have big or small differences. This paper reviews the research on tea cultivation by some contemporary scholars and explains the tea environment and soil conditions through ancient tea books and some local Chronicles. However, China has a vast territory, abundant resources, diverse and complex terrain, and climate, so it is necessary to discuss it by region. In a word, It is concluded that soil and planting environment are very important for tea quality.

Keywords: Song Dynasty, Tea, Environment, Soil

1. Introduction

Tea is the symbol of Chinese culture, which existed as an important economic and cultural crop in the past dynasties, affecting the development of culture, commerce, and other fields. Tea's culture has a long history, and its planting and production system has been expanding and developing with the change of dynasties. Since the Tang Dynasty, the cultivation and production of tea have been gradually systematized, and the fundamental work of tea-The Classic of Tea has appeared. By the Song Dynasty, there were not only many kinds of tea, but also a complete process of production and production, and more cultural activities and meanings about tea were derived, such as ordering tea or tea poems. Taking the cultivation and production of tea as the direction, this paper compares the relevant records and changes in tea cultivation in the Tang Dynasty, Song Dynasty, Da Guan Cha Lun, and Dongxi Shi Cha Lu, and reviews the relevant articles of contemporary scholars, mainly analyzing the soil and environment of tea cultivation.

2. Research review

The following is an overview and summary of contemporary scholars' articles on tea planting and production technology:

Zhu Zizhen and Chen Zugui divided the historical documents related to tea into three parts: tea books, tea events, and tea laws in Selected Historical Materials of Tea in China. Among them, the reference works about tea in the Song Dynasty, such as the Dongxi Tea Trial Record, Tea Tasting Record, Daguan Tea Theory, and Tea Record, all mentioned tea planting, picking, and making methods. Because tea production in the Song Dynasty was greatly influenced by the Tang Dynasty, the production methods mentioned in the Tea Classic in the Tang Dynasty were mostly followed in the Song Dynasty. As the post-Song Dynasty, the records of tea in the Yuan Dynasty's agricultural books, such as some contents in the Collection of Agriculture and Mulberry, should also prove that the tea production methods were continuously passed down, refined, and updated throughout the dynasties.

In On Tea Production Technology in Tang and Song Dynasties, Sun Hongsheng compared the differences and changes in tea production technology in Tang and Song Dynasties from three aspects: tea cultivation technology, tea picking, and tea storage. Tea production technology in the Song Dynasty is more detailed than that in the Tang Dynasty. As far as tea cultivation technology is concerned, the planting conditions and methods of tea trees (such as soil, light, etc.) have been recorded more accurately than those in the Tang Dynasty, and the varieties of tea have been developed in detail. This paper also compares the differences in tea tree propagation techniques in the Tang and Song Dynasties. In the aspect of picking and baking, the popularization of autumn tea picking in the Song Dynasty shows that tea planting management is more largescale than that in the Tang Dynasty. However, the pursuit of "tender buds" in tea picking in the Tang and Song Dynasties was consistent, while the baking techniques were different.

Zhou Li also analyzed the cultivation of tea trees, the management of tea gardens, and the picking and baking of tea leaves in the article Tea Production in Song Dynasty. In the aspect of tea cultivation, more emphasis is placed on describing the method of fertilization, while in the aspect of tea baking, the technology of "grinding tea" and making tea cakes in the Song Dynasty is described in detail.

In the first two chapters of his monograph "The Extreme of Tea: Tea Culture in Song Dynasty", Shen Dongmei first divided the Song tea from different angles, such as the degree of fermentation, shape, or technology. Starting with the tribute tea system, Shen Dongmei described the cultivation and management of tribute tea. Different from the comparison of tea production technology between Sun Hongsheng and Zhou Li and the previous Tang Dynasty, Shen Dongmei added a few modern tea-related technologies for comparison. For example, the ceremony of "calling mountains" in tea picking has changed from the initial folk custom to the sacrificial ceremony for future generations and has become a part of the inheritance of tea culture in the contemporary era. The description of tea making in this book is more detailed, and it involves the packaging of tea and the use of tea sets.

Huashan's "Viewing Song Dynasty Society from Tea Economy (I)" divides tea into loose tea and sliced tea and mainly analyzes the making process of sliced tea. This paper extracts the tea-making process of Beiyuan official baking in Beiyuan Bielu: from picking tea to pasting tea cakes. Although Huashan and Zhou Li both mentioned" grinding tea" and "grinding tea" in their respective articles, they summarized the scope of this step differently. Huashan believes that "grinding tea" belongs to the category of boiling tea and tasting tea, while Zhou Li puts it into the production process of sheet tea.

In the article "Tea Processing in Song Dynasty", Li Shiying mainly elaborated on seven procedures of Beiyuan tribute tea from picking to yellowing. As mentioned in Zhou Li's article, Li Shiying also classified "grinding tea" as the process of making tea, and thought that the "grinding tea" used in the tea grinding process in the Song Dynasty reduced the cost compared with the previous dynasty and was a great innovation in production tools. Zheng Lisheng mentioned in the History of Tea in Beiyuan that Beiyuan attached importance to the new planting and breeding of tea trees. Distinguishing different varieties according to the biological form of tea trees shows that the tea plants in Beiyuan were systematic and ahead of other areas at that time. Wang Zhongyin also mentioned the production process of group tea in Song Dynasty in the article Evolution of Green Tea Production in China. It is also mentioned that loose-leaf tea has also been developed in large quantities.

From the time perspective of the current research on scholars' articles, it can be concluded that academic circles compare and study the Tang Dynasty and the Song Dynasty together. Most of the planting and production technologies have been consistent, but there are still a few viewpoints that have not been unified. For example, the disagreement about whether the process of "grinding tea" should belong to the category of making tea or boiling tea. In addition, at present, academic circles rarely mention the problem of soil selection for tea planting. Therefore, this paper will elaborate and analyze the tea planting soil and its environment as the theme.

3. Related descriptions of tea growing environment and soil in ancient books of Tang and Song Dynasties

There are about twenty existing tea books in the Tang and Song Dynasties. This chapter selects four tea books in Tang and Song Dynasties and one historical book in Song Dynasty to analyze the environment and place of tea planting and sort out the key points of different tea books. Tea Classic was written in the middle Tang Dynasty, Daguan Tea Theory, Tea Record, and Dongxi Tea Trial Record were written in the Northern Song Dynasty, while the History of Song Dynasty was written in the Yuan Dynasty. The Book of Tea, written by Lu Yu in the Tang Dynasty, is

a relatively complete literature on tea in early China. Regarding the soil texture and environment for growing tea, it is mentioned: "On the ground, rotten stones are born on the top, oak soil is born on the middle, and loess is born on the bottom. Where art is not real, it is rare to plant it. " Lu Yu believes that the best land for growing tea is gravel accumulation, followed by soil with gravel, and finally vellow land. Lu Yu believes that those who go wild are the second. The quality of tea planted in the wild is better than that planted in the park, and it is better to choose sunny and shaded cliffs than shady slopes and valleys. In addition to these objective soil and environmental conditions, Lu Yu also recorded the place where tea was produced: "Shannan: on the gorge state, (the gorge state was born in the valleys of Yuan 'a Yidu and Yiling counties.) Xiangzhou, Jingzhou Times, (Xiangzhou, was born in Nanzhang County Valley; Jingzhou was born in jiangling county Valley) under Hangzhou, (the valleys of Hengshan and Chaling counties.) Jinzhou and Liangzhou are down again. (Jinzhou, the valley of Xicheng and Ankang counties; Liangzhou, Shengbao City and Jinniu County Valley.)

Huainan, in Guangzhou, was born in Huangtou Port, Guangshan County, the same as Xiazhou. Yiyang County, Shuzhouji, (born in Zhongshan, Yiyang County, with Xiangzhou. Shuzhou, born in the buried hill of Taihu County, is the same as Jingzhou) Shouzhou, (Huoshan in Shengtang County is the same as Hengshan.) Zhangzhou and Huangzhou are down again. (Zhangzhou, born in-Huangmei County Valley; Huangzhou, born in the valley of Macheng County, is the same as Jinzhou and Liangzhou.)

West Zhejiang, on Huzhou, (Huzhou, born in Guzhu Valley of Great Wall County, is the same as Xiazhou and Gwangju; Shengshan Sang, Confucian teacher Erwu, Baimao Mountain hanging foot ridge, the same as Xiangzhou, Jingzhou and Yiyang County; Shengfengting Mountain Fuyige, Feiyun, Qushui Second Temple, Pecking Muling, is the same as Shouzhou. The valleys of Anji and Wu Kang counties are the same as Jinzhou and Liangzhou.) Changzhou, (Yixing County, Changzhou, under the north peak of Shengjunshan Hanging Foot Ridge, the same as Jingzhou and Yiyang County; Shengquanling Shanquan Temple and Shiting Mountain are the same as Shuzhou. Xuanzhou, Hangzhou, Muzhou and Zhangzhou, (Xuanzhou, born in Yashan, Xuancheng County, is the same as Zhangzhou; Taiping County was born in harmony and lived in harmony, just like Guangzhou. Hangzhou, Lin 'an, and Yuqian counties were born with Tianmu Mountain, the same as Shuzhou. Qiantang gave birth to Tianzhu and Lingyin Temple; Muzhou was born in Tonglu County Valley; Wuyuan Valley was born in Zhangzhou; Same as Hangzhou.) Runzhou and Suzhou are down again. (Runzhou, Shengao Mountain, Jiangning County; Suzhou, born in Dongting Mountain in Changzhou County, is the same as Jinzhou, Qizhou, and Liangzhou.)

Jiannan, on Pengzhou, (born in Ma 'anshan, Jiulong County, to De Temple and Pengkou, the same as Xiangzhou. Mianzhou, Shuzhou, (Longan County, Mianzhou is born in Songlingguan, which is the same as Jingzhou, and Xichang, Changming, and Xishan in Shenquan County are the best; Those who have had pine ridges are miserable. Qingcheng County, Shuzhou was born in Zhangren Mountain, which is the same as Mianzhou. Qingcheng County has loose tea and end tea. Qiongzhou time, Yazhou, Luzhou, (Yazhou Baizhang Mountain, Mingshan Mountain, Luzhou Luchuan, the same as Jinzhou.) Meizhou and Hanzhou went down again. (The pig iron mountain in Danling County, Meizhou, and the bamboo mountain in Mianzhu County, Hangzhou, are the same as in Runzhou.) In eastern Zhejiang, it goes to Yuezhou. (Yuyao County has a waterfall spring ridge, which is called Xianming. The big one is different, and the small one is the same as Xiangzhou. (Mingzhou, Wuzhou times, (Mingzhou, Xiansheng Yucui Village; Wuzhou, Dongbai Mountain in Dongyang County, is the same as Jingzhou.) Taizhou. (Taizhou, born in Chicheng, Fengxian County, is the same as Zhangzhou.)

In central Guizhou, I was born in Sizhou, Bozhou, Feizhou and Yizhou. Jiangnan was born in Ezhou, Yuanzhou, and Jizhou.

Lingnan was born in Fuzhou, Jianzhou, Shaozhou, and Xiangzhou. (Fuzhou, the Yin of Fangshan in Fujian County.)

Its thoughts, broadcasting, expenses, foreigners, Hubei, Yuan, Ji, Fu, Jian, Shao, and Xiang are not detailed in the eleven states, and they are often obtained, and their taste is excellent.

To sum up, the tea-producing areas in the Tang Dynasty covered a wide area and spread all over many provinces today: Hubei, Hunan, Shaanxi, Henan, Anhui, Jiangsu, Zhejiang, Jiangsu, Sichuan, Guizhou, Guangdong, Guangxi and Hainan. And the quality of tea in some areas has not been coordinated and compared. However, it can be seen that these provinces extend southward from Henan and Shaanxi, which are located in the Central Plains, to areas near the sea, mainly the Yangtze River basin, the Pearl River basin, and the rivers along the southeast coast. Cai Xiang, a Song Dynasty poet, mentioned in Tea Record: "Those who produce grain are the best, followed by bamboo, rotten stone and yellow sand." A new viewpoint of "growing in the valley "or" growing in the bamboo" has been added to "rotten stones are born on the top". Intercropping plants gradually replaced the situation that Lu Yu mentioned in the Tang Dynasty in tea planting in the Song Dynasty. Song Zian mentioned that Beiyuan was the first place to cultivate tea in the Song Dynasty in the record of tea tasting in Dongxi. Beiyuan's environment is "the peaks are beautiful, facing each other, and the vegetation is clumped." Water is rich in gold, tea is born in it, and the smell is very beautiful; Isn't it that the mountains and rivers are repeated, and the land is beautiful, and things are suitable? "The Phoenix Mountain in Beiyuan belongs to various bakeries, and the products are delicious. Surrounded by mountains, the mountains have more gravel than the original ones, which is consistent with the view of Lu Yu of the previous dynasty in geology.

Beiyuan, located in Jian 'a Fujian, belongs to the mid-subtropical maritime monsoon climate, with sufficient rainfall and sufficient illumination time throughout the year, which is suitable for the growth of tea trees. Zhao Ji's "Daguan Tea Theory" also emphasized the importance of Jian 'a place to tea production: "Being good at the elegance of Fujian and Fujian, the spirit of Zhongshan and Sichuan." At the same time, he also summed up the environment of tea production: "Where the land is planted, the cliff will be sunny and the nursery will be shady. The stone is cold, its leaves are barren, its taste is thin, and it must be Ziyang and hair; The nature of the soil is applied, its leaves are sparse and violent, and its taste is strong and strong, so it must be shaded and restrained. When yin and yang are combined, the growth of tea is appropriate."

By the time of the Song Dynasty, there were two kinds of tea, namely, slice tea and loose tea. In the History of the Song Dynasty, there are 26 kinds of tea, such as Xianzhi, Yujin, Xianchun, Luya, Chi, Guang, Ji, Tan, Yue, Chen, Lizhou, Jiangling House and Xingguo Linjiang Army, and Zhejiang, Xuanjiang and Dingzhou are above, middle, below or above. Scattered tea leaves Huainan, Guizhou, Jiangnan, and Jinghu, with eleven grades such as Longxi, before the rain and after rain, and Jiangsu, Zhejiang, with the numbers above, middle, below, or first to fifth. In addition to Beiyuan in Fujian as the main source of tribute tea, the Jiangnan area has gradually become a centralized production place, but some areas in Henan and Hubei mentioned in the Tang Dynasty are also involved.

Document name	Describe	Site
Tea Classics (Tang)	"On the ground, the upper is rotten stone, the middle is oak soil, and the lower is loess. Where art is not real, it is rare to plant it. " "The wild man goes up, and the garden is second."	 Shannan: Xiazhou, Xiangzhou, Jingzhou, Hengzhou, Jinzhou and Liangzhou. Huainan: Gwangju, Yiyang County, Shuzhouji, Shouzhou, Qizhou and Huangzhou. Western Zhejiang: Huzhou, Changzhou, Xuanzhou, Hangzhou, Muzhou, Zhangzhou, Runzhou and Suzhou. Jian Nan: Pengzhou, Mianzhou, Shuzhou, Qiongzhou, Yazhou, Luzhou, Meizhou and Hanzhou. Eastern Zhejiang: Yuezhou, Mingzhou, Wuzhou, Taizhou. Central Guizhou: Sizhou, Bozhou, Feizhou and Yizhou. Jiangnan: Ezhou, Yuanzhou and Jizhou. Lingnan: Fuzhou, Jianzhou, Shaozhou and Xiangzhou. Its thinking, broadcasting, expenses, foreigners, Hubei, Yuan, Ji, Fu, Jian, Shao and Xiang are eleven states.
Tea Record (Song Dynasty)	"Those who produce grain are the best, bamboo is the second, rotten stone is the second, and yellow sand is the second."	
Tea Experiment in Dongxi (Song Dynasty)	"The peaks are beautiful, embracing each other, and the vegetation is clumped. Water is rich in gold, tea is born in it, and the smell is very beautiful; Isn't it that the mountains and rivers are repeated, and the land is beautiful, and things are suitable? "	Fujian Jian' ou

	"Good at the elegance of Oumin, the spir- it of Zhongshan River." "The land of planting production, the	Fujian Jian' ou	
On Daguan Tea (Song Dynasty)	cliff will be sunny, and the nursery will be cloudy. The stone is cold, its leaves are barren, its taste is thin, and it must be Ziyang and hair; The nature of the soil is applied, its leaves are sparse and violent, and its taste is strong and strong, so it must be shaded and restrained. When yin		
	and yang are combined, the growth of tea is appropriate. "		
History of Song		Tea originated from Qian, Yuan, Rao, Chi, Guang, Ji, Tan, Yue, Chen, Lizhou, Jiangling Prefecture, and Xingguo Linjiang Army. There are 26 such as Xianzhi, Yujin, Xianchun and Luya, and the numbers of Zhejiang and Xuanjiang and Dingzhou are above, mid-	
Dynasty (Yuan)		dle, below or first to fifth. Scattered tea leaves Huainan, Guizhou, Jiangnan and Jinghu, with eleven grades such as Longxi, before rain and after rain, and Jiangsu, Zhejiang, with the numbers above, middle, below or first to fifth.	

4. Relevant records of tea growing environment and soil in local chronicles

Due to the limited space, this part chooses some local chronicles in Zhejiang and Fujian to collect and sort out the data. The two local chronicles in Zhejiang are both in the Song Dynasty, and the planting environment will be recorded in combination with the surrounding environment (such as the surrounding water source) in addition to the specific location; The two local chronicles in Fujian are in the Ming Dynasty and the Republic of China. The planting records in the Republic of China were more detailed, and the cultivation methods were supplemented in addition to the planting sites. However, what these volumes of local chronicles record in common is that they mention what is the superior product of tea.

It is mentioned in volume 96 of Lin 'a Records: "Xiankeng Mountain, in the west of the county, there are seven immortals in Jinxian and there are seven immortals around the stone because the famous mountains produce tea, which is very delicious." Lin 'an is now Hangzhou. Hangzhou, located in Zhejiang, has a subtropical monsoon climate with four distinct seasons and abundant rainfall, which meets the standard of tea planting in the climate. This sentence also mentions that the tea produced by famous mountains tastes sweet. The soil in mountainous and hilly areas of Hangzhou is mainly red soil. It can preserve water and fertilizer well and has good air permeability. Moreover, there are many of gravel and shade in the mountainous and hilly areas, so the objective conditions for growing tea are satisfied, and the geographical and soil conditions are similar to those of Beiyuan in Song Zian's "Dongxi Tea Trial Record". "Lin 'a Zhicun" also mentioned: "The two mountains in the north and south and the famous mountains in the other seven cities generally produce tea." It can be seen that the tea production in Lin 'an is considerable. However, considering that "Hangzhou, Lin 'an and Ikuamame in Yuqian County are the same as Shuzhou" mentioned in Tea Classic, the quality of tea in Lin 'an is not the top grade but the second in other areas in the same period. Except that the geographical and climatic conditions at the time of planting are not excellent compared with Beiyuan, there may be factors such as tea-picking technology and tea-making technology that interfere with the quality.

"Wu Xingzhi" mentioned in Volume 20: "Gu Zhu is famous in Sanlishan Market in the northwest of Changxing County. In the past, Wu Fu paid close attention to his ancestral home, which was the land of the capital. Today, there are many teas in the cliff valley to pay tribute to the old age. New Tang Zhiyun: Guzhu has tea for tribute. For details, please refer to the records of Xiajun County of Gongcha Courtyard: Tea is born on the stone, which is called purple bamboo shoots, and it is the top grade. " Xing Wu is now Huzhou City, Zhejiang Province, and the planting method of tasting tea on it is consistent with the "rotten stones are born on the top" in the tea classics. It is also mentioned in the book: "Songkhla and Changxing have Songkhla, which can be used in palaces and mountain ruins. It is known as the rock and stone of Yunjinshan Mountain,

Which is known as crimson and has an ochre stream. Jinsha Spring, it is generally recorded that there is a Biquan on the side of Guzhu Gongcha Courtyard, and the thin sand nest is like Jin Quan. In the fifth year of Yuanhe, the secretariat Fan Fuzheng created a pavilion and said,' Jinsha is old as a cloud, and the spring is introduced into the yellow sand in the west of Gongbei Courtyard, which is used by Gongbei Steaming. Xing Wu's tribute tea is made of Songkhla, and Jinsha Spring containing minerals is used to make tribute tea.

The location of tea planting is mentioned in Volume 36 of Fuzhou Official Records: "Yueshan, which is Dongyueling in the south, crosses the ridge and has an island in the east, which is called Zhuyu Island, Qianyu Island, Houyu Island, Hengyu Island, and Tea Garden in the hills, all of which are in Pingtian. In the east, there is a pool under the Guling Mountain, where the Iron Dinglong lives and produces tea. "In the Ming Dynasty, Fuzhou planted tea in a relatively flat place in mountainous areas. During the Republic of China, Volume 2 of Jian 'ou County Records mentioned the true story of tea service improvement: "First, planting tea: it is appropriate to swing the mountain to the sunny place, and those with small black soil and gravel have the taste of Qingyuan, and they also have the victory of rock bones and flowers; Second, cultivation: every year in mid-spring, labor is used to uproot its creeping weeds, and after picking, it needs to be hoed again. When it is deep, the soil is dug to relax its roots, and the tea bushes are naturally flourishing, resistant to aging and fragrant. "The picking season has been postponed to around long summer. Volume 7 also mentions the practice of planting begonia as an intercropping plant in the tea garden. Black soil refers to soil with high humus content. The reason for its formation is that plant debris cannot be decomposed in time, but accumulates organic matter and humus year by year, so the climatic conditions for the formation of black soil are special. Most of the black soil in China is concentrated in the northeast. Therefore, the "black soil" here is not the black soil defined in the current agricultural discipline, but may only be other soils with grayed colors. In Jian 'ou County Records, it is still believed that the tea planted in sandy soil tastes better, and it is necessary to keep the soil loose and breathable so that the quality of tea produced will be better.

 Table 2 The description of where tea is grown and in the literature (2)

Document name	Site	Describe
Records of Lin 'an (Song)	Hangzhou, Zhejiang	"Xiankeng Mountain, in the west of the county, there are seven immortals in Jinxianhe, and there are seven immortals around the stone. Because of the famous mountains, tea is very delicious." "The two mountains in the north and south and the famous mountains in the seven cities outside generally produce tea."
Wu Xingzhi (Song)	sir robert giffen	"Gu Zhu's name is Yun Xi Wu Fu in the northwest of Changxing County, which is a place of capital city. Today, there are many teas in the cliff valley to pay tribute. New Tang Zhiyun: Guzhu has tea for tribute. For details, please refer to the records of Xiajun County of Gongcha Court- yard: Tea is born on the stone, which is called purple bamboo shoots, and it is the most top grade. " "songkhla, Changxing has songkhla, and you can go to the palace and pay attention to the moun- tain ruins. It is known as the rock and stone of Yunjinshan Mountain, which is known as crimson color and has an ochre stream."
Fu Zhou Fu Zhi (Ming)	Fuzhou, Fujian	"Yueshan, which is Dongyueling in the south, crosses the ridge and has an island in the east, such as Zhuyu Island, Qianyu Island, Houyu Island, Hengyu Island, and Hilly Tea Garden, all of which are in Pingtian In the east, there is a pool under the Guling Mountain, where the Iron Din- glong lives and produces tea. "
Records of Jian' ou County (Re- public of China)	Fujian Jian' ou	"First, grow tea: it is appropriate to swing the mountain to the sun, and those with small gravel in black soil have the taste of Qingyuan, and they have the victory of rock bones and flowers; Sec- ond, cultivation: every year, in mid-spring, labor is used to uproot its creeping weeds, and after picking, it needs to be hoed again. When it is deep, the soil is dug to relax its roots, and the tea bushes are naturally flourishing, resistant to aging and fragrant. "

5. Conclusion

The detailed records of tea planting and production began in the Tang Dynasty at the earliest, and then developed and improved in later generations. But on the whole, all kinds of information about tea soil is relatively lacking and vague. Related research needs to rely more on records in modern and contemporary geography or agronomy to supplement more details. However, this does not mean that tea production in the Song Dynasty was not systematic. Tea culture flourished in the Song Dynasty, giving birth to unique Beiyuan tribute tea and tea ordering and tasting culture. As the first step of production, tea planting not only affects the quality and variety of tea but also enriches and perfects tea culture.

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