

The Domestication Process of Tea and the Formation of Tea Varieties

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Abstract China, as the homeland of tea, is one of the earliest countries to discover and utilize tea. The domestication of tea and the formation of tea varieties are reflections of ancient Chinese wisdom and labor, and they play a crucial role in the development of Chinese tea industry. This review provides an overview of the origin of tea and the interaction between wild tea trees and humans, as well as the preliminary domestication practices. It explores the biological mechanisms of tea tree domestication, including artificial selection and breeding, genetic variation within tea tree individuals, and hybridization of different tea tree varieties. The domestication process of tea and the formation of different tea varieties are systematically examined, and the impacts on the tea industry are analyzed. The paper concludes by emphasizing the historical significance of tea domestication and the formation of tea varieties in order to gain a comprehensive understanding of their importance.

Keywords Tea domestication; Tea variety formation; Wild tea tree; Tea industry; Tea culture

Tea is considered a precious beverage in China with a history of several thousand years. As one of the oldest and widely consumed beverages in the world, tea has a long history and profound cultural significance. Since ancient times, tea has played an important role in human society, becoming a core element in social gatherings, ceremonies, arts, and medicine (Lin, 2010). Tea is not only an essential part of Chinese culture but also an integral aspect of the daily life of the Chinese people. Throughout the lengthy cultivation process, tea trees have transformed from wild types to domesticated cultivars, giving rise to numerous tea varieties, including green tea, black tea, oolong tea, etc. The domestication of tea and the formation of tea varieties stand as successful examples of how humans apply biological principles to transform nature and enrich culinary culture (Zhang et al., 2018).

The domestication of tea refers to the process of deliberately selecting suitable tea trees for cultivation to obtain desired qualities. During this process, humans use methods such as selective breeding to modify the growth, development, chemical metabolism, and quality components of tea trees. The domestication of tea trees has evolved from wild collection and utilization to intentional cultivation. Studying the domestication process of tea can enhance our understanding of the genetics and physiological characteristics of tea trees, which can serve as a theoretical foundation for genetic improvement and the selection of new tea varieties.

The formation of tea varieties is a significant result of tea domestication. Tea leaves can be categorized into different types based on variations in chemical composition and processing methods, including green tea, black tea, oolong tea, white tea, and others (Chen et al., 2016). Each type of tea possesses distinct characteristics in terms of flavor and functionality. Studying the origins and formation processes of various tea varieties can provide a historical overview of the dissemination and evolution of tea culture. Research and preservation endeavors aimed at exceptional tea varieties also play a role in preserving the diversity of tea culture.

The domestication process of tea and the formation of different tea varieties are incredibly important for the advancement of human society and the success of the tea industry. Having a deep understanding of how tea was domesticated and how different varieties were developed not only allows us to enjoy and appreciate tea more fully, but it also helps to support the long-term growth of the tea industry and preserve the rich essence of tea culture. In this review, we will explore the domestication process of tea, the development of tea varieties, and their significant impact on both human society and the tea industry.

1 The Origin and Early Domestication of Tea Trees

1.1 The Origin of tea trees

The study of the origin and early domestication of tea is a complex and continually evolving field, marked by controversies and differing viewpoints. A comprehensive understanding of the historical origins of tea relies on a multidisciplinary approach encompassing archaeology, history, and scientific research (Zhang et al., 2018).

In Chinese historical documents, the early records of tea can be traced back to the *Shénnóng Běncǎo Jīng* (*Classic of the Materia Medica*). This is an ancient herbal medicine work, considered to be one of the earliest botanical classification works in China, traditionally attributed to Shénnóng. *Shénnóng Běncǎo Jīng* (*Classic of the Materia Medica*) records the use and effectiveness of tea leaves, listing them as one of the "beverages", which indicates the existence of tea thousands of years ago.

In addition, another early document called *Chá Jīng* (*The Classic of Tea*), which was written by the Chinese tea sage Lù Yǔ. *Chá Jīng* (*The Classic of Tea*) records the classification, cultivation, production, and consumption methods of tea, and has had a profound influence on the inheritance and development of tea culture. Although the exact creation time of *Chá Jīng* (*The Classic of Tea*) is disputed, it can generally be traced back to the 3rd century BC to the 2nd century BC.

In 2008, Japanese experts identified two tree roots excavated in Tianluoshan Site in 2004 as plants belonging to the *Camellia* genus in the Theaceae family. In 2011, similar tree roots were discovered in Tianluoshan Site and were confirmed to be tea tree roots by the Tea Research Institute of the Chinese Academy of Agricultural Sciences (Figure 1). Previously, at the Hemudu Site in Zhejiang province, some leaves from the Lauraceae family were found piled up near the ancient village's stilthouse dwellings and were also recognized as ancient tea relics (Zhu, 2015; Cheng, 2016). The discoveries at the Tianluoshan Site pushed back the origin of the tea tree by another 3 000 years.



Figure 1 Tree roots of the genus *Camellia* from the Tianluoshan Site

However, in recent years, some scholars have proposed that, in addition to China, Southeast Asia may also be a possible center of origin for tea trees. For instance, in the northern parts of Myanmar, northern Vietnam, and southern Laos, there are wild tea tree populations similar to those in China. These regions are believed to have a certain genetic relationship between the Mengzi tea tree and wild tea in Myanmar (Zhao et al., 2014). However, to date, no ancient tea tree fossils have been discovered in these areas, and the possibility of them being an independent center of origin for tea trees still requires further verification.

Although the discovery of the Tianluoshan Site provides some clues about the history of tea cultivation, further research and evidence are still needed to determine the ownership of these roots. The origin and timeline of tea may require more extensive archaeological and scientific studies to arrive at more precise conclusions.

1.2 Wild tea tree

The wild tea tree possesses characteristics of being primitive in evolution, strong resistance to adversity, and containing specific biochemical components, making it an important genetic resource (Tang et al., 2009). Understanding the wild types and their features of tea trees is a crucial aspect to comprehend the ecological, biological, and genetic basis of tea leaves. It provides essential information to grasp the genetic foundation, ecology, and biological characteristics of tea leaves, with significant implications for the improvement, production, and utilization of tea.

Wild tea trees are famous for their diversity, encompassing various species and subspecies. The main ones include Chinese wild tea (*Camellia sinensis* var. *sinensis*), Assam tea (*Camellia sinensis* var. *assamica*), and Dali tea (*Camellia taliensis*) (Figure 2). Chinese wild tea (Figure 2) is mainly distributed in provinces such as Yunnan, Sichuan, Guizhou, Fujian, and Anhui in China (Tian et al., 2008; He et al., 2009). It is the most common and widely cultivated variety of wild tea trees, serving as the primary source for cultivated tea trees. Assam tea is mainly found in Yunnan, Tibet, Sichuan, as well as other Asian countries like India, Myanmar, and Laos. With larger leaves and taller tree growth, Assam tea is also known as "Large Leaf Tea." Dali tea is primarily distributed in Dali region, Yunnan, China. It has smaller leaves and shorter tree height, while possessing unique flavors and aromas.

There are some obvious differences between wild tea trees and cultivated tea trees. Wild tea trees grow slowly, with a general height of more than 10 m, while some old trees can reach a height of 15 m. The trunks are usually thin and elongated, and the crowns are sparse and not very dense. The leaf shape is relatively small, typically measuring 2 to 5 cm in length and 1 to 2 cm in width, with an oblong-lanceolate shape and pointed ends, and the edges are finely serrated. The leaf surface is deep green, while the back is light green, with both sides covered in tiny white hairs, which enhance the insulation and moisture retention functions of the leaves. The stem juice is deep green due to its rich content of catechins and other bitter cations. The leaves also contain abundant aromatic oils, giving off a strong fragrance.

Wild tea trees are highly sensitive to environmental changes, with a weak resistance to cold, and they thrive in warm and humid climatic conditions. However, they can adapt well to the primordial habitat, exhibiting strong disease resistance and the ability to fend off various pests. The growth of wild tea trees is perpetual throughout the four seasons, but it flourishes most abundantly during spring and summer.

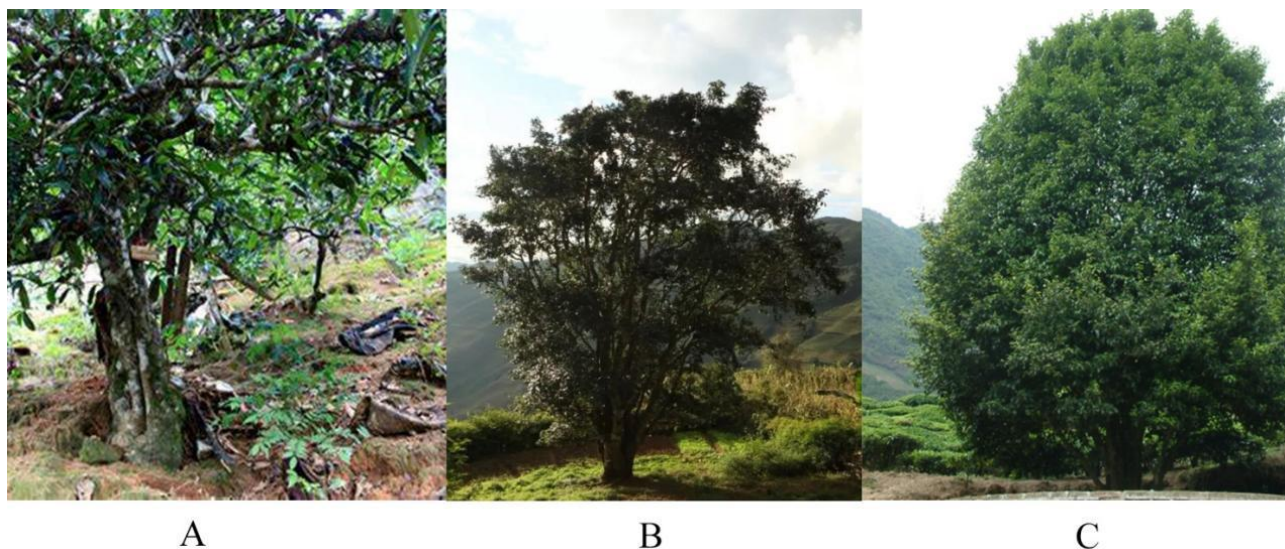


Figure 2 Wild tea trees

Note: A: *Camellia sinensis* var. *sinensis*; B: *Camellia sinensis* var. *assamica*; C: *Camellia taliensis*

1.3 Evidence of early tea tree domestication and archaeological discoveries

Since the earliest discovery of the tea tree, local humans have engaged in interactions with wild tea trees. They may have realized that the leaves of wild tea trees can be used as food, and upon tasting, discovered their characteristic bitterness. As time passed, people began their initial practices of domesticating wild tea trees.

The initial practice of domesticating tea includes selecting premium tea resources, cultivating wild tea trees through manual methods, controlling the growth environment of the tea trees, and observing their growth habits. Through these attempts, humans gradually gained insight into the characteristics and growth habits of wild tea trees, thus providing a theoretical basis for the cultivation of tea trees in the future.

During the process of harvesting and utilization spanning thousands of years, people gradually gained a profound understanding of the biological characteristics and effects of tea plants. The appearance of records mentioning "tea" in literature during the Warring States period marked the entry of tea utilization into the era of historical civilization. With the development of economy and culture during the Qin and Han dynasties, the artificial cultivation of tea plants gradually replaced wild tea plants in their original habitats, leading to the emergence of primitive tea gardens (Figure 3) and the domestication of tea plants. Archaeologists have discovered traces of tea leaf usage in sites located in Sichuan and Yunnan provinces in China.

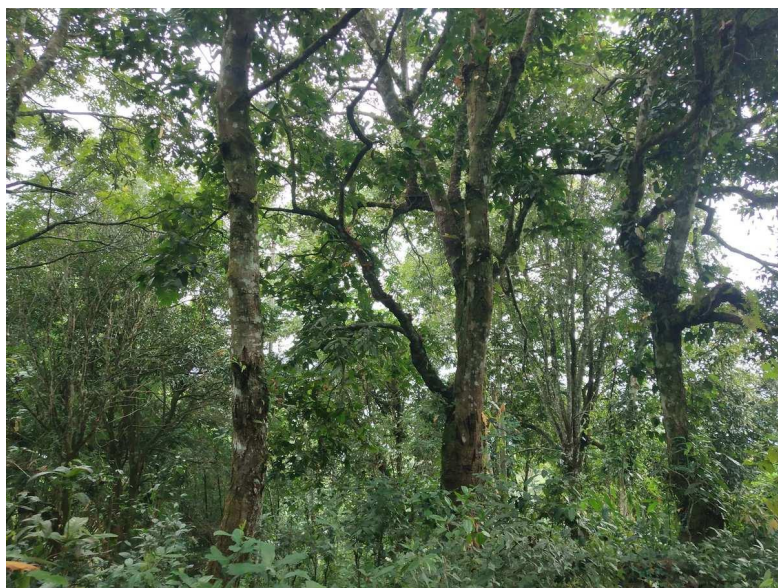


Figure 3 Ancient tea plantation

Over time, humanity has started interacting more deeply with and practicing the domestication of wild tea trees. They may have begun selecting better-quality wild tea trees for targeted cultivation and gradually controlling their growing environment. Through these efforts, humans have gradually learned about the growth characteristics and advantages of wild tea trees, thereby laying the foundation for their initial domestication.

It is worth noting that wild tea trees have been growing in their natural environment for thousands of years, adapting to the local ecosystem and climate conditions. Even after tea trees began to be cultivated, wild tea trees continued to grow extensively in their natural habitat, preserving the resources of natural tea trees. The diversity and genetic resources of wild tea trees are crucial for the sustainable development of the tea industry. By protecting and properly utilizing the resources of wild tea trees, we can maintain the diversity of the tea industry and safeguard the genetic genes of tea trees to cope with potential environmental challenges in the future.

2 The Process of Tea Domestication

2.1 Exploration and research on wild tea trees by humans

The domestication of tea began with the exploration and research of wild tea trees by humans. In the early stages of human civilization, people started observing and interacting with plants in their natural environment. Among the various edible plants they discovered was the wild tea tree. Initially, it is possible that people stumbled upon the fact that the leaves of the wild tea tree could be consumed as food. However, they soon recognized the bitter taste of tea leaves.

With further research on wild tea trees, people began to explore the edible and medicinal value of tea leaves, and started to recognize the health benefits of drinking tea. It was recorded in *Chá Jīng (The Classic of Tea)* that "Chá zhī wéi yǐn, fāhū Shénnóngshì, wényú Lǔzhōugōng (It roughly means that the consumption of tea originated from Shénnóng, and developed by Lǔzhōugōng)". Shénnóng was one of the ancestors of the Chinese nation and an early discoverer of tea trees. Legend has it that Shénnóng, who tasted various herbs, encountered a severe poison one day, but was saved by consuming tea (known as "Chá" in Chinese). Gradually, tea became a significant beverage, widely disseminated and utilized.

2.2 Domestication practices on wild tea trees by humans

With the discovery and study of wild tea trees, humans have begun the domestication practice on them. Domestication refers to the conscious selection and cultivation of plants or animals with useful characteristics, in order to meet human needs and interests. During the domestication process of tea, humans attempt to improve and optimize the characteristics of tea trees by selectively choosing tea leaf resources with better quality and undertaking targeted planting.

The process of wild tea trees domestication by humans has been long and gradual. Through continuous observation and experimentation, people have discovered the differences between various wild tea tree varieties and started selecting those trees that grow well and have good leaf quality for reproduction and cultivation. Such domestication practices have gradually improved the growth characteristics, yield, and taste of tea trees.

After undergoing extensive domestication practices, wild tea trees have gradually evolved into cultivated tea trees. Cultivated tea trees refer to a population of tea trees that are artificially planted and managed to meet specific needs and goals. In comparison to wild tea trees, cultivated tea trees may exhibit significant differences in appearance, leaf size, yield, and tea leaf quality.

Domestication practice on wild tea trees by humans has gradually allowed trees to adapt to the environment of cultivation and management. The quality and quantity of tea leaves from cultivated tea trees have become relatively stable, making them more suitable for large-scale tea production and commercial cultivation. Over time, the cultivation of tea trees has become more widespread, leading to the growth and expansion of the tea industry.

2.3 The crucial period of tea domestication in China

The domestication process of tea is a culmination of accumulated knowledge and development over a long period of time. It represents the constant exploration and understanding of humans towards the tea plant. The domestication and development of tea during different periods have laid the foundation for the formation of Chinese tea culture and the prosperity of the tea industry.

2.3.1 Qin and Han dynasties: Preliminary utilization

During the Qin and Han dynasties in ancient China, there had been some development and documentation regarding the cultivation and domestication of tea. For instance, the *Shénnóng Běncǎo Jīng (Classic of the Materia Medica)* recorded the medicinal value and consumption method. It described tea as an herb that could detoxify, relieve fatigue, and invigorate the spirit, while also mentioning its bitter taste. Although the cultivation and domestication of tea had not reached the widespread extent seen later, tea as a beverage and medicinal herb gradually gained recognition and documentation during the Qin and Han periods.

Furthermore, according to archaeological evidence, tea had already been collected and utilized during the Qin and Han dynasties. In the unearthed artifacts from the Han tombs at Mawangdui in Changsha, Hunan Province, China, traces of tea and tea utensils were discovered (Figure 4). These findings indicate that during the Qin and Han periods, tea were already being used and had become a beverage of the nobility and upper social classes.



Figure 4 Tea set unearthed from the Mawangdui Han Tomb in Changsha

The domestication and cultivation of tea during the Qin and Han dynasties were relatively limited. Nonetheless, the records and practices from this period laid the foundation for the development and spread of tea. In subsequent eras, the domestication and cultivation of tea experienced broader expansion and emerged as a crucial component of Chinese tea culture.

2.3.2 Tang and Song dynasties: Reproduction and development

During the Tang and Song dynasties, the cultivation and utilization of tea underwent significant advancements. The range of tea varieties expanded, and improvements were made in the tea-making process. Tea quickly became an integral part of social and cultural activities, as tea culture flourished during this time. The dissemination and exchange of tea cultivation and production techniques played a crucial role in the domestication of tea.

During this period, the tea-growing regions began to shift northward, leading to the improvement of tea varieties. In the Tang dynasty, tea trees had already spread from their place of origin to northern regions such as Henan and Shaanxi. In the Song dynasty, famous varieties like Longjing and Biluochun emerged in Jiangsu and Zhejiang provinces. Cultivation techniques started incorporating hybridization and improvement of tea trees using different wild species.

2.3.3 Ming and Qing dynasties: selection and promotion of varieties

During the Ming and Qing dynasties, the selection and promotion of tea tree varieties marked an important stage in tea domestication. People began purposefully selecting and breeding tea tree varieties with excellent quality and characteristics. This led to increased diversity and adaptability of tea tree varieties, allowing for the development of distinctive teas in different regions and under various climatic conditions.

Meanwhile, the production techniques of tea have been further improved and promoted, leading to an increase in both quantity and quality of tea. Famous tea varieties have emerged in various regions, such as Longjing (Dragon Well) and Biluochun (Green Spiral), gradually maturing through cultivation. Similarly, Anji White Leaf and Wuyi Rock have also formed in their respective production areas. The varieties of tea plants and the art of tea-making have significantly advanced.

2.3.4 Modern: Scientific research and variety improvement

Now, the domestication and improvement of tea rely on scientific research and technological innovation, resulting in further enhancement of tea quality. Through studies on the genetics, physiology, and molecular biology of tea plants, people have gained a deeper understanding of the genetic mechanisms and expression of traits in tea plants.

In addition, the utilization of modern genetics and breeding techniques has enhanced the improvement of tea varieties and the selection of desirable traits. Simultaneously, there has been continuous improvement and optimization in tea garden management, cultivation techniques, and tea processing technology.

2.4 The biological mechanism of tea tree domestication

The domestication process of tea plants involves multiple biological mechanisms, including artificial selection breeding, genetic variation within tea plant individuals, hybridization of different tea plant varieties, and cultivation techniques tailored to local conditions and seasons. These mechanisms interact with each other, collectively promoting the domestication and formation of tea varieties, providing a foundation for the development of the tea industry and the adaptability of tea plants.

2.4.1 Artificial selection breeding

Selective breeding is one of the main methods for tea plants domestication, through which ideal traits of tea trees can be fixed. First, tea trees with larger leaves, compact buds, and strong fragrance are selected and propagated through asexual breeding methods such as cutting and grafting. Then, excellent strains with vigorous growth, high yield, and strong resistance are selected from the population of tea trees for seed reproduction and pedigree breeding. The growth period, leaf bud characteristics, tea polyphenol content, and other traits of tea trees are scored and screened, and the mother trees with excellent overall traits are selected. Through a systematic selection method, superior strains are chosen for planned pairing and hybridization.

By continuously repeating the process of selective breeding, it is possible to effectively stabilize and enhance the desirable characteristics of tea plants. This is one of the most classic and effective techniques in the domestication of tea trees.

2.4.2 Genetic variation within tea tree individuals

During the long process of cultivation, tea plants undergo genetic variations within individuals, which is one of the important mechanisms of tea plant domestication. Natural genetic variations exist within individual tea plants due to factors such as genetic recombination and random mutations. These genetic variations may result in differences in characteristics and quality among tea plant individuals (Yang et al., 2016).

During the domestication process of tea plants, humans selectively breed individuals with desirable traits through observation and evaluation. The genetic variations within tea plant individuals provide diversity for domestication, allowing humans to choose and obtain tea plant varieties with better traits. These genetic variations enrich the diversity of tea plant traits and provide a reliable genetic foundation for breeding new varieties. For example, by utilizing tea plant leaf color mutants, tea varieties with unique appearances like Huaqing and Wulicui can be selectively bred.

In addition, the genetic variation of tea trees provides resources for the creation of excellent genes. By studying the genetic variation of tea trees, the process of molecular breeding in tea trees can be more effectively advanced.

2.4.3 Hybridization of different tea tree varieties

The hybridization of tea tree varieties is also an important mechanism in the process of tea tree domestication. Through the hybridization of different tea tree varieties, the excellent traits of different varieties can be combined, resulting in the creation of new tea tree varieties, thereby increasing the genetic diversity and adaptability of tea trees.

Different tea tree varieties can be hybridized, utilizing the principle of complementary advantages, to create new strains that combine the excellent traits of their parent plants. Hybridization between tea tree varieties can be achieved through artificial pollination or natural mating. Some tea tree varieties have obtained better disease resistance, adaptability, and yield through hybridization, thus enjoying extensive application in the tea industry.

Hybridization is not only capable of creating new varieties but also serves as a crucial pathway for breeding superior strains. Hybrids often exhibit heterosis, characterized by enhanced quality, increased yield, and improved disease resistance, etc.

3 Formation and Classification of Tea Species

3.1 Biological basis of tea species formation

There are various kinds of tea, but they all belong to the family of Theaceae, mainly including the large leaf variety, small leaf variety, and wild variety. The types and varieties of tea plants are primarily formed by their genetic composition and the influences of natural selection.

The genome of the tea tree is incredibly intricate, harboring a multitude of genes and non-coding RNA. These genes and RNA orchestrate the intricacies of the tea tree's growth, development, secondary metabolism, and adaptation to the environment. The formation of different types and varieties of tea tree is mainly shaped by the forces of natural selection and human intervention.

Natural selection refers to the process of adaptation and evolution of tea trees in their natural habitat. Tea trees exhibit adaptive variations and genetic mutations under different environmental conditions, leading to the formation of various species and varieties. And the artificial selection pertains to the deliberate breeding and selection of tea trees by humans in order to obtain superior varieties and desirable traits.

3.2 The correlation between the formation of tea varieties and artificial selection

The formation of tea varieties is closely related to artificial selection. Through long-term domestication and cultivation practices, humans have continuously selected and bred tea tree varieties with superior characteristics, thus forming different types of tea. In the process of domestication and cultivation of tea trees, artificial selection plays a crucial role.

Through artificial selection, humans choose tea tree individuals with excellent tea leaf quality, strong adaptability, and high resistance to diseases and pests for breeding. In this process of selection and breeding, the genotypes and phenotypes of tea trees gradually improve and optimize, leading to enhanced quality and characteristics of tea varieties. Artificial selection plays a crucial role in the formation of tea varieties.

3.3 Main varieties and classifications of tea

3.3.1 Main types and characteristics of Chinese tea varieties

China is the birthplace of tea culture and has abundant tea resources and varieties. Chinese tea trees are mainly divided into two categories: the large-leaf type (*C. sinensis* var. *sinensis*) and the small-leaf type (*C. sinensis* var. *assamica*).

The large-leaf type is mainly produced in Yunnan, Sichuan, Guizhou and other places, including Pu'er tea, Dianhong tea, etc. Its tea tree leaves are relatively large and thick. The trees are tall and suitable for high-altitude and rainy climates. Large-leaf teas have a golden color, rich aroma, and mellow taste. The small-leaf tea is mainly produced in Fujian, Zhejiang, Jiangsu, Anhui, and other regions, including green tea, black tea, oolong tea, yellow tea, and various other varieties. Its tea leaves are relatively small and tender, with a short and delicate tree stature, making it suitable for low-altitude, warm, and humid climatic conditions. The small-leaf tea has a green or deep brown color, with a fresh or rich aroma, and a refreshing or gentle taste. The tea soup is relatively light.

Apart from the large-leaf and small-leaf varieties, China also boasts some wild tea varieties. These teas possess the natural characteristics of being wild; their tea brew is light and delicate, exuding a faint aroma, and offering a smooth and gentle taste. Furthermore, they possess certain health benefits.

3.3.2 The development and dissemination of tea varieties around the world

Tea originated in China and gradually spread to neighboring countries and regions such as India, Japan, and Korea, along with the opening of the Silk Road and the Tea-Horse Ancient Road. In these places, tea trees gradually developed their own varieties and customs, such as India's Assam black tea and Ceylon black tea, as well as Japan's Genmaicha (Figure 5).



Figure 5 Genmai tea of Japan

With the process of European colonial expansion, tea also spread to Europe and the Americas, becoming a beloved beverage among Western people. In Europe, tea underwent improvements and blending, giving rise to various tea varieties such as British black tea, Russian black tea, Turkish black tea, and so on. In the Americas, tea became an important industry in the southern United States, giving birth to varieties like southern black tea.

Moreover, the spread of tea also brought about exchanges and fusion of tea culture and the way of tea. Tea culture is not just a culinary culture, but also a way of life and spiritual pursuit, with different traditions and values in different countries and regions.

All in all, the development and dissemination of tea have been influenced by various factors, including natural environment, artificial selection, and cultural exchanges. In different regions and cultural backgrounds, tea has formed distinct varieties and tea cultures.

4 Influence of Tea Domestication and Formation of Tea Varieties on the Tea Industry

The domestication and formation of tea cultivars have exerted extensive and profound influences on the tea industry. The improvement in quality and taste enhances consumers' tea experience, while the increased adaptability and yield of tea plants contribute to the supply and economic benefits of tea production. The development of the tea industry and the inheritance of tea culture drive the prosperity of local economy and culture.

4.1 Improvement of quality and taste

The domestication and formation of tea varieties have brought important influences to the tea industry, one of which is the improvement of quality and taste. Through long-term domestication and artificial selection, the varieties of tea trees have been improved and optimized, leading to the enhancement of tea quality and taste. Different tea varieties possess unique flavor characteristics, for example, Longjing offers a refreshing and fragrant

aroma, Tieguanyin exudes a rich floral and fruity scent, while Keemun black tea boasts a strong malty flavor. The emergence of these improved varieties has enriched the choices of tea flavors and enhanced consumers' tea experiences.

4.2 Improvement in tea adaptability and yield

The domestication and formation of tea plants have also brought about improved adaptability and increased production. Through the domestication and selection of tea plants, varieties have been cultivated that are well-suited to different environmental conditions and growth characteristics. These tea plant varieties can thrive in different climates and soil conditions, and they possess a higher potential for yield. The tea industry is able to expand more extensively into different regions, thereby increasing the supply of tea and enhancing economic benefits.

4.3 Formation of tea culture

Tea culture is a cultural phenomenon that has developed through the long-term cultivation and utilization of tea by human beings. It encompasses various aspects such as the planting, picking, processing, and consumption of tea, embodying the connotations of culture, philosophy, art, and etiquette. Tea culture is not just a cultural phenomenon, but also a way of life and a pursuit of spirituality.

The relationship between the tea domestication and tea culture is inseparable. The process of tea domestication is humanity's gradual understanding and utilization of tea, gradually forming the foundation of tea culture. In the development of tea culture, people have not only explored the craftsmanship of tea production and the techniques of tea tasting but have also created various cultural phenomena related to tea, such as tea utensils, tea sets, and the art of tea. These are all the results of the interaction between the domestication of tea and tea culture.

4.4 Development of the tea industry and inheritance of tea culture

The domestication of tea, as well as the formation of tea varieties, have played a pivotal role in the development of the tea industry. This industry has flourished in different regions and become a vital pillar of many local economies. The entire tea production process, including processing, trade, and consumption, forms a complete industry chain, generating employment opportunities and promoting local economic prosperity.

Furthermore, the domestication and formation of tea varieties also contribute to the inheritance and development of tea culture. Tea culture is an important cultural heritage in China and other tea-producing regions, with tea being regarded as a symbol of spirituality and way of life. Through the domestication of tea and the formation of different varieties, unique tea cultures have emerged in various regions, which include the development of tea ceremonies, tea art, and tea utensils. The inheritance of tea culture not only enriches people's spiritual life but also promotes the growth of the tea industry and the expansion of the tea consumer market.

5 Prospect

The interaction between tea domestication and tea culture has made tea an important part of human history and culture. The domestication and cultivation of tea not only provided humans with the beverages they need, but also inspired people's pursuit of life, nature and beauty. The inheritance and development of tea culture have had a positive influence on human thinking, lifestyle and values, becoming a treasure of human culture.

The formation and research of tea varieties have had an important impact on the quality and yield of tea. Through research and exploration of tea varieties, the yield and quality of tea can be improved, further promoting the development and innovation of the tea industry. At the same time, research on tea varieties is also conducive to the protection and inheritance of tea culture, and promotes the inheritance and development of tea culture.

Future tea research and industrial development need to pay more attention to the inheritance and development of tea culture. Tea culture is an important product of tea domestication and the development of the tea ceremony, and has had an important influence on tea planting, picking, production and tasting. The inheritance and development of tea culture requires the joint efforts of the government, enterprises and all sectors of society. At the same time,

the development of the tea industry also needs to focus on technological innovation and environmental protection, and promote the tea industry to develop in an efficient, eco-friendly and sustainable direction.

In future tea research and industrial development, we need to pay more attention to the inheritance and development of tea culture and the tea ceremony, strengthen research and exploration of tea varieties, promote the tea industry to develop in an efficient, eco-friendly and sustainable direction, and facilitate the development of human culture and ecological civilization.

Author's contributions

LCC is the person in charge of this project, completing the paper concept, initial draft writing, revision, and final draft. The author read and approved the final manuscript.

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