An Analysis on Pseudo-Tea from Perspective of Chinese Medical Literature
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Abstract. As export of Chinese tea gradually developed and peaked in the 19\textsuperscript{th} century, reports on pseudo-tea started appearing frequently, attracting attention from both the government and merchants. Although pseudo-tea has existed in both China and western countries, the western merchants adulterate tea specifically for profits. In contrast, pseudo-tea emerged in China with the popularization of tea drinking and its use has also been recorded in literature. In many studies on Traditional Chinese Medicine (TCM) literature, pseudo-tea such as leaf of Liu/Babylon weeping willow, Huai/Chinese scholar tree, Shinan/Chinese photinia, and Gaolu/big leaf tea have not only been identified and recognized, but also considered particularly suitable for mixing with genuine tea. Tea is a medicinal and edible product, and public cognition on tea production and tea drinking is influenced by TCM literature. Hence people always mix pseudo-tea with genuine tea as a common practice. However, pseudo-tea was behind the decline of Chinese tea trade in the foreign trade market when western countries entered the high-quality tea trade and started developing colonial tea industry. This article discusses the "Pseudo-Tea", defines as in TCM literature, or substitute genuine tea for drinking, or blends and decocts with genuine tea for drinking, which all constitute the pseudo-tea.

1. Introduction

In the 19\textsuperscript{th} century, tea was one of the most important commodities in Chinese export trade. In particular, the amount of exported tea increased sharply after the opium war. Nevertheless, the emergence of pseudo-tea not only reduced tea quality, but also seriously affected the reputation of Chinese tea, as a result of which Chinese tea gradually lost its competitive advantage in the international market and the Chinese tea business was in complete recession. The issues of pseudo-tea and dyed tea have been thoroughly investigated by foreign scholars as well as domestic researchers such as Tao Dechen\textsuperscript{1}, Zhong Weiming\textsuperscript{2}, Shi Tao\textsuperscript{3}, Cao Ying\textsuperscript{4}, Yu Liangzi\textsuperscript{5}, and Zhao Weihong\textsuperscript{6}. Ye Suqiong performed a Master’s level analysis titled Study on adulteration in tea trade between China and Britain in 19\textsuperscript{th} century, whereas Wei Yu investigated Research on fake tea in the tea trade between China and the United States. The above domestic scholars wrote special chapters to introduce the situation of tea adulteration and tea dyeing, but they are mainly from the perspective of economic history, business history, or institutional history. In addition, foreign scholars such as Frederick Accum\textsuperscript{7} of Germany, Arthur Hill Hassall\textsuperscript{8} of the United Kingdom, and William Ukers\textsuperscript{9} of United States have investigated safety of food and tea imported in the 19\textsuperscript{th} century extensively. The foreign researchers also performed a special analysis on tea adulteration by Chinese and western merchants and concluded that the western merchants not only learned the Chinese methods of making counterfeit tea, but also produced more adulterated tea using various methods, which rendered the tea pernicious.

According to analysis of current domestic researchers, pseudo-tea is one of the most significant reasons leading to the decline in tea trade in modern China. However, traditional Chinese medicine
(TCM) literature is rich in records on mixing of tea leaves with other leaves, some of which are particularly appropriate for consumption. With the transformation of the mainstream tea culture with time, the demand for tea quality and purity has evolved significantly. Of course, pseudo-tea preparation also includes making up the weight of tea by increasing its packaging weight and mixing tea with inferior quality tea, tea dusts, wood chips, rice hull, iron chips, sand or pericarp; however, this will not be discussed in this article.

2. Pseudo-tea in Ancient China

Pseudo-tea became popular with the advent of tea drinking. In the Three Kingdoms Period, Lu Ji mentions in the book *Shi Shu* “Shanchu,……People in the Wu area use the leaf as tea” and “The tree of prickly ash looks like Zhuyu,……People in Sichuan and Wu area like to add the leaf of prickly ash in the brewing of tea.” It appears that in the early Shu and Wu district, tea could be paprika or ailanthus. During the time of the West Jin dynasty, Guo Gongyi noted in Record Widely, “Tea grows as bushes, boils and drinks the real tea, we also call it Ming. And it is also known as tea that some herb like Zhuyu and Xizhi can be decocted to drink, or boils Zhuyu with preserved fruit. A reddish one fried with rice is called no liquor tea.” During the rule of the Wei, Jin, Northern, and Southern dynasties, in addition to the genuine tea, soups cooked with cornel and preserved fruit were also called tea.

During the rule of the Tang dynasty, records on pseudo-tea continued to increase. The trade in tea had become lucrative enough for the imperial authorities to levy. Meanwhile, various types of pseudo-tea had emerged. Cha Pu (Collection of Tea) written during the time of the early Five Dynasties recorded that, “In Changsha Prefecture, people gather the buds of Photinia trees as a kind of tea. On the fourth day of the fourth month of the year by the lunar calendar, people in Hunan Province will pick some Adinandra leaves, smash them, mixing the juice with rice to make steamed rice cakes. They would definitely eat the cake over a cup of Luan Tea. This way, they can get rid of the head wind.” In addition, “Other generations of tea, such as tender leaf from Zaojia/Chinese honey locust, Huai/Chinese scholar tree, and Liu/Babylon weeping willow, can also be picked in spring and processed together with tea buds.” During the tenure of the Tang rulers, pseudo-tea included the buds of Shinan/Chinese photinia, Zhiqiao/bitter orange, Gouqi/Barbary wolfberry, Pipa/loquat, Zaojia/Chinese honey locus, Huai/Chinese scholar tree, Liu/Babylon weeping willow, etc.

During the rule of the Song dynasty, tea production significantly exceeded that during the time of the Tang dynasty because of extensive cultivation of tea trees. According to Sun Hongsheng, although the annual production of tea during the rule of the Tang and Five Dynasties cannot be ascertained, it was clearly a considerable amount. Tea production increased considerably during the tenure of the Song dynasty. Its gross yield during the rule of the Northern Song dynasty was between 8.3552 million Jin to 9.5488 million Jin. The yield during the time of the Southern Song dynasty was also close to this amount. This increase in production suppressed the production of pseudo-tea to some extent. In 1060, the official Ou Yangxiu submitted The Memorial of Discussion on Tea Law, which states “In the past, the government allowed civilian to add dopant in tea, thereby tea was productive, cheap and widespread. Nowadays, when people trade tea, they only want genuine tea. The price of genuine tea is expensive because of its small amount.” Lu You, who wrote A Diary of the Journey to Sichuan during the rule of the Southern Song dynasty mentioned “In the past, Fujian tea was mixed with powdered rice. Later, tea was mixed with yam. Over the past two years, tea was mixed with buds of Chu/paper mulberry. It tasted and smelled liked real tea, much milk, but without smell after plum rain season. Only expert can tell the difference.” In the early Song times, official tea was allowed to be adulterated with the tender buds that tasted like tea, as genuine tea was costly, while pseudo-tea was inexpensive.

According to statistics of the Qing government, before the opium war, the gross production of Chinese tea was almost 200 million Jin and the export amount was 45 million Jin in 1840.
output was already double the amount produced during the rule of the Song dynasty. As the output was able to meet the demand, records of pseudo-tea were less during this time.

After the opium war, the demand for Chinese tea from western countries, especially the UK and the USA, had increased dramatically, which was followed by an increase in the annual amount of exported tea. According to statistics, during 1840, tea export was as high as 0.45 million Dan. In 1868, this amount reached 1.5268 million Dan. In 1888, tea exports reached the peak of 2.4 million Dan, and until 1894, the amount of exported tea was maintained at about 1.9392 million Dan. Thus, in five decades, the amount of exported tea had increased by four to six times. During this period, the use of pseudo-tea was frequently recorded in customs reports, government documents, a monograph of research, and newspapers, all expressing concern that pseudo-tea adversely affected the export of Chinese tea and suggested improvements and rectifications to restore the reputation and sales of Chinese tea.

Many types of herbal leaves can be consumed with tea or as tea. Tea-production regions were extended and tea output increased. With increase in the popularity of tea as a refreshing beverage, tea trade became more profitable. After the collapse of the mid-Tang dynasty, the government began to levy tea tax, indicating that tea had become a significant commercial commodity. During the rule of the Song dynasty, the annual output of tea rose sharply despite the existence of pseudo-tea, which was sufficient to meet the daily requirements of people. The Song dynasty established the government monopoly on tea. Tea farmers were forced to sell tea to the government at a fixed low price, thereby increasing the severity of the tea adulteration problem. In addition, genuine tea leaves were mixed with leaves of other Chinese herbs in early Song times to make official tea, which was another reason for tea adulteration. Before the opium war, pseudo-tea was not a major issue and records regarding pseudo-tea were rare. After the opium war, China lost its trade sovereignty, and many foreign merchants who came to China to purchase tea, caviled at the tea quality and controlled the price. Tea adulteration continued unabashed and unabated. Numerous researchers consider pseudo-tea as one of the crucial reasons behind the decline of Chinese tea in modern times; however, from the perspective of TCM literature, mixing tea with herbal leaves was appropriate.

3. Pseudo-tea in Materia Medica

Tea is a type of medicinal and edible product. Accordingly, tea, as well as pseudo-tea, was recorded in ancient literature on TCM at the beginning of the popularization of tea drinking. During the rule of the Wei and Jin dynasties, Annotation of Materia Medica by Tao Hongjing mentioned that, “In Youyang, Wuchang, Lujiang, and Jinling, good quality tea is produced. Drinking of such tea is good to health. Except for the tealeaf, leaves of Tianmendong/Cochin Chinese asparagus, and Baqi/China root greenbrier are also good for health if they are served as tea. Other leaves are just cold and slippery. There is a kind of tea called Zhencha produced in Badong county. It is scorched to roll it up. Service of such tea prevents sleep. In some places, people brew tea with the leaf of Tan and Shuli. Such tea is cold and slippery. There is a plant called Gaolu mu in the south. It resembles tea in every respect except that it tastes rather bitter and astringent. Powdered leaves from Gaolu can also be brewed into a kind of tea soup. This drink has the effect of keeping one alert for a whole night. Just because of this feature, it is popular with laborers toiling overnight to extract salt from sea-water. Local residents in Jiaozhou and Guanzhou simply love it. A guest or a visitor would first of all be offered a cup of the drink with some fragrant herb in it, which expresses the host’s hospitality.” Per the customs of those times, several types of pseudo-tea such as leaf of Tan/White scandal wood and Shuli/Davurian buckthorn were served. In addition, consumption of the leaves of a tea-like plant called Gualumu/Gaolu/Big leaf tea could keep people awake, which is similar to the effect of genuine tea.

From the Tang to the Five Dynasties, owing to the increase in tea output and the popularization of tea, tea drinking was in vogue. Meanwhile, more varieties of pseudo-tea emerged. The Newly Revised Materia Medica (also known as Materia Medica of the Tang Dynasty), published by the
imperial edict in Tang times, mentions a herbal leaf of Diyu/Garden burnet, that was able to replace tea, “Garden burnet, it is bitter, slightly cold and nontoxic.…” Now it grows near the road everywhere, the leaf is similar to Yuye/Folium ulmi pumilae/Leaf of siberian elm, but a bit longer. In the first phase of its growth, it spreads on the ground. “Tea brings down adverse ascending gas, keeps one awake, helping in digestion. It is good to be processed in one day. Steam and smash all night. Using the long-stored tea can stirs up gas and pathogenic Wind. Local people mix it with nascent tender Huaiye/Chinese scholar tree leaf, Liu/Babylon weeping willow leaf.” 25 After Meng Xian, Chen Cangqi, who wrote Supplements to Newly Revised Materia Medica, mentioned that the tea substitute Gaolu/big leaf tea, “tastes bitter and astringent. The tree grows in the mountains in the south sea. Its leaf is similar to tea leaf, but is bigger. Southerners call it Ming and cherish it much.” 26 In addition, Chen also recorded Mujin/Shrubalthea, “It is plain, nontoxic.……Stew the drug to make a decoction and drink it in the same way as tea.” 27 And sanders had been mentioned earlier. In the time of the Five Dynasties, some Chinese medicine prescriptions on pseudo-tea were recorded in The Heart Mirror of Dietotherapy by Zan Yin. The pseudo-tea of that time included fructus aurantii and sophora buds. A prescription for brightening the eye mentions, “One Liang of Zhiqiao/Bitter orange, and then grind the druy into powder. Like the method of tea, fry, and sip it.” 28 Another prescription on the Huaiye/Chinese scholar tree leaf states, “Steam one Jin of tender Huaiye, and make it as tea. Then grind it into powder, boil and suck as tea.” 29

TCM literature from the time of the Song to Yuan dynasty not only recorded the popular versions of pseudo-tea, but also indicated the herbs that cannot be mixed with tea. During the rule of the early Song dynasty, an official journal on herbal products called Illustrated Classic of Materia Meidca mentioned that “Classic of Tea says, tea is a fine wood growing in the south.…… And with various synonyms such as Jia, She, Ming, Tu, and Chuan.……The tea leaf resembling the buds of Zhiqiao, Gouqi and Pipa, is generally good to disperse invading pathogenic Wind. There are also tealeaves similar to buds of Zaojia, Huai, and Liu. Such teas are made by leaves picked in early spring. Tea supplied by people in the south to the government is always mixed with miscellaneous leaves. But leaves of couch grass, reed and bamboo cannot be mixed. Leaves of other plants in the mountain may all be mixed into the tea leaves. It is surprising that even the leaf of Chun and Shi are mixed.” 30 Hence, the Illustrated Classic of Materia Meidca compiled by the authority recognized that tea can be mixed with Zhiqiao/bitter orangeb, Gouqi/barbary wolfberry, Pipa/loquat, Zaojia/Chinese honey locust, Huai/Chinese scholar tree, Liu/Babylon weeping willow, Chun/Chinese toona, and Shi/Persimmon. This viewpoint was cited in Classified Emergency Materia Medica, which covers a decent range of other documents on medical and herbal subjects published before the Song Dynasty. Therefore, repeated publication of the Classified Emergency Materia Medica gradually popularized the use of pseudo-tea. In addition to the medical and herbal journals, many prescription books also recorded methods of replacing genuine tea with other herbal leaves. For instance, Pacefule Holy Benevolent Prescriptions mentioned the use of the bud of Shinan/Chinese photinia as follows: “Tender buds of Shinan: Pick, steam and bake it like making tea, stir and grind the drug into powder. Stew the decoction as the way of tea, and take it.” 31 Furthermore, another prescription regarding the bud of Zaojia/Chinese honey locust mentions “Tender bud of Zaojia: Steam and bake it like making tea. Take out and grind it to powder. Fry it like tea at no time. It is also good to add some salt.” 32 In other words, buds of Shinan and Zaojia are not only made into tea and drunk, but are also fried or boiled as tea. Although herbal leaves are not tea per se, but the methods of production and processing are identical to those used for making genuine tea.
### Table 1. List of records of pseudo tea in *Compendium of Materia Medica.*

| No. | Pseudo-tea (Chinese pinyin/English name) | Original text | Medicinal parts of herbs |
|-----|-----------------------------------------|---------------|-------------------------|
| 1   | Sang/Mulberry*1 | [Explication] Li Shizhen: Sangye is a drug that functions on the Large Intestine Channel of Hand Greater Yang and Stomach Channel of Foot Greater Yang. Stew it in water to make a decoction. Take the decoction in the same way as tea to quench thirst in diabetes. | Leaf |
| 2   | Weyoa/Combined spicebush**2 | [Indication] Chen Cangqi: Stir-fry the drug and then grind it into small pieces. Take it in the same way as tea. It tonifies the interior, reinforces qi, and stops frequent and incontinent urines. | Tender leaf |
| 3   | Heihua/Chinese scholar tree**3 | [Prescriptions] Hematochera due to an attack of pathogenic Wind into the intestine and hemorrhoids: Steam one jin of tender Huayue, and make it as tea. Then grind it into powder, boil and suck as tea. Long-term use of the drug brightens the eyes. | Leaf |
| 5   | Xiangguo/Hachow elsholtzia**4 | [Indication] Wang Ying: Boil the drug to make a decoction and drink it like tea. This will prevent attack of pathogenic Heart. It harmonizes the interior and warms the Stomach. | Stem, leaf |
| 6   | Bohu/Wild mint**5 | [Previous Explanation] Li Shizhen: People plant the drug a lot. In the second month, the seedling germinates from the perennial root. Forks are formed at around the time of the solar term of Pure Brightness(April 5). Its stem is square and red, with leaves growing in opposition in pairs. At first, the leaf is long, with a round tip. Then, it develops into a shape with sharp tip. People living in the Wu, Yue, Chuan and Hu areas use the drug in the same way as tea. | Stem, leaf |
| 7   | Hubohe/xiaojuecao)/Asian pear**6 | [Previous Explanation] Su Song in his *Tajing Bencao*, said: Hubohe(xiaojuecao) is a similar drug to Bohe, but it is slightly sweet. It is produced in Jiangsu and Zhejiang and local people use it as tea. It is colloquially called Xinhubohe. | Stem, leaf |
| 8   | Xiangshi/Ly/Sawtooth oak*7 | [Previous Explanation] Li Shizhen: Its tender leaf can be stewed and served as tea. | Tender leaf |
| 9   | Qnjiao/Zanthoxylum bungeanum Maxim**8 | [Previous Explanation] People in Sichuan and Wu area like to add the leaf of prickly ash in the brewing of tea. | Leaf |
| 10  | Tan/White scandal wood*6 | [Previous Explanation] In some places, people brew tea with the leaf of Tan/White scandal wood and Shuli/Davurian buckthorn. Such tea is cold and slippery. | Leaf |
| 11  | Liangshi/Shula/Davurian buckthorn**9 | Bisdem | Leaf |
| 12  | Zhau/Bitter evergreen chinkapin**10 | [Previous Explanation] Now people collect paper mulberry leaf of saw tooth oak, leaf of oriental blueberry and leaf of combined spicebush and serve them in the way of tea. What a multiple spectrum of teas! | Leaf |
| 13  | Shanfan/Caudate sweet leaf**11 | Bisdem | Leaf |
| 14  | Nanzhu/oriental blueberry**12 | Bisdem | Leaf |
| 15  | Gaolu/Big leaf tea**13 | [Previous Explanation] Li Shizhen: Gaolu looks like tealeaf, but it is as big as a palm. Rub the leaf into pieces and brew it in boiling water. It taste very bitter and its soup looks turbid. People in Guangdong and Guangxi use it as tea, calling it Kudeng, even though it is far inferior to ordinary tea. | Leaf |
| 16  | Bai/Chinese arborvitae**14 | [Prescriptions] Jingyanfang: Infantile watery stool. Stew Baiye in water to make a decoction and take it as tea is drunk. | Leaf |
| 17  | Liu/Babylon weeping willow**15 | [Prescriptions] Jijianfang: Whitish and turbid urines. Collect Liuye on the day of the solar term of the Pure Brightness(April 5). Take the drug in the same way as tea. It can be steamed and dried and served as tea. | Leaf |
| 18  | Zhigao/Bitter Orange**16 | [Indication] Li Shizhen: Stew the drug and take it in the same way as tea is drunk. It is good to disperse invading pathogenic Wind. The above is quoted from the book Cha Pu | Leaf |
| 19  | Guong/Barberry weeping willow**17 | [Indication] Zhou Quan: Served as tea. It quenches thirst, eliminates fever, and restores sex-drive, enhances male sexuality and detoxifies toxin of wheat flour. | Seedling |
| 20  | Shinan/Chinese photinia**18 | [Explication] The book *Cha Pu* by Mao Wenxi: People in Hunan collect Yangtongcao in the fourth month. They pound the drug to get juice, which is used to cook rice. At the same time, people also collect Shanynye and drink it as tea. It is a drug that disperses the Wind. Yangtong is merely Nanzhu/vaccinium bracendicum/oriental blueberry. | Bad |
| 21  | Mujin/Šhrubhalte**19 | [Previous Explanation] Yu Hsielung: Its tender leaf can be eaten as fresh vegetable or drunk as tea. | Leaf |
| 22  | Tangli/Birch leaf sweetgum*20 | [Previous Explanation] Herbal for Relief of Famine: The leaf of the drug is slightly bitter. Stir-fry the tender leaf and soak it in water. Rinse the leaf and blend with oil and salt. Then, it can be served as a tidbit. Or, it can be steamed and dried and served as tea. | Leaf |
| 23  | Shru/Reindeer moss**21 | [Indication] Chen Cangqi: When Wu Bao became a hermit in the mountain, he took this tea as tea. But anyway, this might not be the only thing that can be relied on if one wishes to live longer. | Leaf |
| 24  | Denganlincia/Rush**22 | [Prescriptions] Jijianfang: Insomnia with open eyes all night. Simmer Denganlincia to make a decoction. Take the decoction in the same way as tea. The patient will be able to sleep. | Root, stem |
| 25  | Fangji/Pretor-stamen stepphana*23 | [Indication] Zhouchoufang: It is good for treating a prolapsed rectum. Bake the drug and then grind it into powder. Stew to make a decoction and drink it like tea. | Fruit |
| 26  | Maifu/Wheat bran**24 | [Prescriptions] Weisheng Bujiang: Perspiration due to general debility and night sweat. Stir-fry Fuxiaoma and strong with mild fire and then grind into powder. Take 2.5gian of powder each time with rice soup. | Fruit |
| 27  | Wumen/Fructus mume preparata**25 | [Prescriptions] Fushou Jijiang: Diarrhea with thirst. Served Wumer to make a decoction. Take the decoction in the same way as tea is served. | Fruit |
| 28  | Ju/Pepe tangerine**26 | [Prescriptions] Shiit Xinjing: To help digestion and dissolve phlegm and to eliminate heat in chest. Stir-fry 0.5 liang of Jupi and then grind it into powder. Served the powder and take the decoction like tea. | Peel |
| 29  | Bingliang/Arec*27 | [Explication] The book Helin Yulu by Luo Dajang: People living in area south of the Five Ridges take | Fruit |
| 30  | Wujia/Slender style acanthophanaxis**28 | [Explication] Tang Shwen: The drug can be ground into powder and drunk as tea or soup. | Root, peel, stem |
During the rule of the Ming and the Qing dynasties, more herbal leaves were recorded as tea. *Compendium of Materia Medica* by Li Shizheng recorded many types of pseudo-tea, such as Sang/mulberry, Wuyao/combined spicewood, Huai/Chinese scholar tree, Diyu/garden burnet, Xiangrou/Brachyotum henryi, Bohe/wild mint, Jixuecao/Asiatic pennywort, Xiangshi/sawtooth oak, Sang/mulberry, Wuyao/combined spicebush, Huai/Chinese scholar tree, Diyu/garden burnet, Tangli/Brachyotum henryi, etc. All the above herbs were substitutes of tea, or could be mixed with tea.

**Table 2. List of records of pseudo-tea in the *Supplement to the Compendium of Materia Medica*.**

| No. | Pseudo-tea (Chinese pinyin/English name) | Original text | Medicinal parts of herbs |
|-----|----------------------------------------|---------------|--------------------------|
| 1   | Shenye/leaf of Ginseng⁵³                   | The leaves of Ginseng are brought to LiaoNing province by the ginseng merchants. With fragrant odor and stimulating body metabolism without consuming "qi", they are prepared as presents by the merchants for their relatives and friends. They can be made into soup in substituting of tea, and are not regarded as medicine. | Leaf |
| 2   | Huo Shihu/Dendrobium huoshanense⁶⁶        | Huo Shihu originates from Jiangnan Huoshan. Its shape is smaller than Jinchai Shihu/Dendrobium nobile. Its root is yellow, bending, not straight, and sometimes in a spherical shape. The natives consume it as tea. | Root, stem |
| 3   | Pahacaca/or Xiangnga/ Typha orientalis (or Cattail)⁶⁰ | It treats Lai/Scrophula of man or woman: the roots of Cattail are collected, washed, chopped it into pieces, boiled with marmite, the boiled soup is drunk as tea. | Root, Leaf |
| 4   | Luyuezhou/or Quiquera⁶⁰                        | The local people drink it as a substitute of tea, and believe that: it could help in promoting digestion, activating spleen function. It is cold and effective to release summer-heat. | Branch, Leaf |
| 5   | Caomian/Levant cotton (or Arabian cotton)³⁰ | Bascou Jng describes: the flower of Levant cotton can stop bleeding, and the hull of it can treat diaphragm. In August or September, the hulls of Levant cotton are collected, boiled into soup as tea. Drinking of this soup is thought to be beneficial in treating diaphragm and dysphagia. | Shell |
| 6   | Yexiacao/or Shac ao, Xiangfuzi/Nutgess galinge⁶³ | It relieves the teeth-paining and stops the teeth-shaky. Renhui Fang describes: Picking up the root of Nutgrass galinge, boiling it into soup as tea. The soup is effective in stopping the toothache and teeth-shaky in one or two days after drinking. | Root |
| 7   | Niantzhu/or Nanzhu / Oriental blue berry⁶⁹ | By washing the eye with the water containing the leaf of Oriental blue berry, the fire, wind, heat and swelling of the eye is eliminated. By drinking the boiled soup of its leaves like tea, the infantile malnutrition is relieved. | Leaf |
| 8   | Fengye/Bishi describes: The Guiyang County of Chenzhou is rich of Fengye. Drinking it as tea relieves the intermittent headache, as the meaning of its Chinese name. | Leaf |
| 9   | Songgigao/or Songzhi/Colophony (or Resin)⁷² | It has subtle scents. The natives boil and drink it as tea. | Peel |
| 10  | Xuecha/Vernicula thunboli thallus⁷²       | Zhao Xuemin describes it as: it originates from Yingshan county of Yunnan province where has high mountain and is covered with snow all over the year. The Verniculate grows in the snow environment and actually it is not a real tea, but a kind of buds. The natives pick and roast it, make it in the shape of tea. | Leaf |
| 11  | Hongmao cha⁷¹                              | Taiwan Annals: It is a kind of herbs with five-petaled yellow flowers. The shape of its leaf is similar to the melon seeds, also with five-petals. Its root is like vine. Digging its root, boiling it after dried, drinking the boiled soup from it help to neutralize the emotions. | Root, Leaf |
| 12  | Jiaocicha/or Kuding cha/leaf of Broadleaf Holly⁷⁴ | It originates from Huizhou. In February or March, the natives picking it together with other kinds of teas. Its root and leaf are also locally named as perny holly and Kuding respectively. The root and leaf are mixed together, roasted, and baked into tea. | Leaf |
| 13  | Yuntangcha/or Shiri / Rein deer moss⁷⁵    | Yuntangcha: the natives sell Mengshancha in towns which is not a real tea, but a kind of buds. Its root is like vine. Digging its root, boiling it after dried, drinking the boiled soup from it help to neutralize the emotions. | Root, Leaf |
| 14  | Hongmao cha⁷¹                              | It originates from the west of Guangdong province, which is one kind of tender seedling, but looks like red flower. It was prepared by the natives as presents for guests. | Moss |
| 15  | Huanglianya/or Huanglianya / Pistacia chinesis bunge⁷⁶ | Xiuqingkao perscribes: Its leaf is sharp, similar to HuaiShu (Stropholobium japonicum). The tender leaves are collected, roasted, and made into tea, one kind of so-called “Ming Cha". | Leaf |
| 16  | Meigu huca/ Rose flower⁷⁹                  | In case of stomach ache due to emotional depression and the hyperactive liver-qi attacking the stomach, drinking the rose flower soup as tea would effectively relieve the stomach. | Flower |
| 17  | Jinlianhua/flower                          | Jinlianhua and Meiguihua: the leaves are collected, roasted, and made into tea, one kind of so-called “Ming Cha". | Flower |
| 18  | Huaqinc/Sanqi (or Kuding) / Oriental blue berry⁷⁶ | It originates from the west of Guangdong province, which is one kind of tender seedling, but looks like red flower. It was prepared by the natives as presents for guests. | Leaf |

Suplement to the *Compendium of Materia Medica* compiled by Zhao Xuemin during the Qing dynasty rule mentions respectable pseudo-tea, such as...
Liaoshen/Ginseng, Huoshihu/Dendrobium, Pubaocao/Herba typhae, Liuyueshuang/Qujiecao, Caomian/Levant cotton, Yexiao/nutgrass galingale, Nantan/zhuzu/oriental blueberry, Fengye, Songpiaogao/Colophony, Xuecha, Hongmaocha/black crude tea, Jiaocicha/Big leaf tea, Yunzhicha/Reindeer moss, Honghuachua, Huanglian (see Table 2). In addition, *Prescriptions for Universal Relief* also recorded respectable prescriptions of pseudo-tea, which included Fangji/four-stamen stephania, Huai/Chinese scholar tree, Pipa/loquat, Zhiqiao/bitter orange, Hubohe/Asian pennywort, Mujin/Shrubalthea, Ju/ripe tangerine, Diyu/garden burnet, Gaolu/big leaf tea, Wuyao/combined spicebush, Luomo/Japanese metaplexis, Zaojia/Chinese honey locust, Shinan/Chinese photinia, and Sang/Mulberry (Table 3).

Table 3. List of records of pseudo tea in *Prescriptions for Universal Relief*.

| No. | Pseudo-tea                          | Original text                                                                 | Medicinal parts of herbs |
|-----|-------------------------------------|-------------------------------------------------------------------------------|-------------------------|
| 1   | Fangji/four-stamen stephania        | It is good for treating prolapse of the rectum. Bake the drug and then grind it into powder. Stew to make a decoction like tea and drink it. | Fruit                   |
| 2   | Huai/Chinese scholar tree           | It treats severe intermittent headache, brightens the eye and tonifies the brain. Cut the tip of a tender pod and boil it. Take the decoction in the way as tea. A prescription of Huaiye for improving eyesight: Steam one Jin tender leaves of Huai according to the way of stir-baking, grind the drug into powder, stew the decoction and sip it like the way as tea. A prescription of Huaiyacha for treating pathogenic Wind into the intestine and hemorrhoid. Steam and bake the tender buds of Huai, then grind it into powder as making tea. According the way of tea, stews the decoction of the drug, drink a little at no time , and it is good for treating Wind-epilepsy of various types. | Fruit, bud, leaf          |
| 3   | Pipa/loquat                         | It is good for treating drunkenness. Pipa leaves more or less, cleans the hair with wipes, bakes and grinds drug into powder. Take 3 qian as steeping tea twice or three times each day. | Leaf                    |
| 4   | Zhiqiao/Bitter orange               | A prescription of Zhiqu for improving eyesight. One Lang of Zhiquao, grind it into powder, decoct and sip it as tea. | Unknown                 |
| 5   | Hubohe/Japanese metaplexis          | A prescription of Juxuecao for dispersing attack and accumulation of pathogenic Wind in the chest and diaphragm. Take Hubohe like tea , and it works immediately. It is colloquially called Xinluobohe. | Unknown                 |
| 6   | Mujin/Chinese honey locust          | It disperse invading pathogenic Wind: Stew Mujinhu to make soup to substitute tea. | Flower                  |
| 7   | Ju/Ripe tangerine                   | To help digestion and dissolve phlegm and to eliminate heat in chest. Stir-fry 0.5 Ju of Jupi and then grind it into powder. Stew the powder and take the decoction like tea. | Peel                    |
| 8   | Diyu/garden burnet                  | It eliminates pathogenic Heat. Use the drug as a substitute for tea. | Leaf                    |
| 9   | Gaolu/Big leaf tea                  | Stew the leaf to make tea to quench thirst, brighten the eye and keep awake. | Leaf                    |
| 10  | Wuyao/Combined spicebush            | It stops frequent and incontinent urine. Pick the tender leaf and root of Wuyao, make pieces as tea, roast and grind it, then fry and take it. It tonifies the interior, and reinforces qi. Pick the tender leaf and root of Wuyao, make pieces as tea, roast and grind it, then fry and take it. | Leaf, root               |
| 11  | Luomo/Japanese metaplexis           | A prescription of Luomo for dispersing invading pathogenic Wind and Qi. It is tonifying and warming. Pick and steam Luomo leaves in summer as the way of making tea, then bake it, stir and grind it into powder. Stew the decoction like tea, and take it at no time. | Leaf                    |
| 12  | Zaojia/Chinese honey locust         | A prescription of Zaojia for treating Intestine Attack by Wind, dispersing pathogenic Wind and Humidity of viscera: Pick, steam and roast the tender buds of Zaojia, bake it as the way of making tea. Stir and grind the drug into powder. Stew the decoction as tea, and take it at no time, it also good to add some salt. | Tender bud               |
| 13  | Shinan/Chinese photinia             | A prescription of Shinanya for dispersing invading pathogenic Wind. It is tonifying and warming. Pick, steam the tender buds of Shinan, then roast it as the way of making tea. Stir and grind the drug into powder, and fry and pour as tea, then take it. | Tender bud               |
| 14  | Sang/Mulberry                       | A prescription of life prolongation: Collect the mulberry in the fourth month when it flourishes. Another time for collection is in the 10th month, when, after frost falls, two thirds of the leaves have fallen off. Pick the one third left on the tree. This is called mulberry leaf for immortals. Mix both leaves collected in the fourth month and after frost and dry them in the shade. Pound them into powder and then make pills or medicinal powder. Or they can be stewed to make a decoction, which can be taken in the same way as tea. | Leaf                    |

In ancient TCM literature, tea is always accompanied by other herbal. The economic value of tea has increased as tea drinking has become a common culture worldwide. The “tea category” in TCM literature of recent times includes not only new varieties of tea, but also different types of pseudo-tea that can be mixed with genuine tea. Statistically, some pseudo-tea are mentioned frequently in TCM literature, such as the leaf of Gaolu/Gualu/Jiaocicha, Huai, Tan, Liu, Zhiqiao, Dazaoli/Shuli, Mujin, Diyu, Gouqi, Nanzhu/Nantianzhu, Shirui/Yunzhicha, Ju, and Shinan (see Table 4) For modern tea trade, the above pseudo-tea are frequently mixed with genuine tea and are often mentioned in newspapers, magazines, documents, and custom reports.
Table 4. Frequency count of pseudo tea appeared in materia medica literature.

| Pseudo tea | Tang Dynasty | Song Dynasty | Ming to Qing Dynasty | Frequency |
|------------|--------------|--------------|----------------------|-----------|
| Tai         | 1            | 1            | 1                    | 3         |
| Dangbai/Sheba | 1       | 2            | 1                    | 5         |
| Hua         |              |              |                      |           |
| Miao        |              |              |                      |           |
| Du          |              |              |                      |           |
| Zhang        |              |              |                      |           |
| Ji          |              |              |                      |           |
| You         |              |              |                      |           |
| Zong        |              |              |                      |           |
| Chan        |              |              |                      |           |
| Shu         |              |              |                      |           |
| Papa        |              |              |                      |           |
| Gou         |              |              |                      |           |
| Jixuecao   | 1            | 1            | 1                    | 4         |
| Xiangshi   | 1            | 1            | 1                    | 3         |
| Qinjiao     |              |              |                      |           |
| Chu         |              |              |                      |           |
| Li          |              |              |                      |           |
| Shanzhu     |              |              |                      |           |
| Nantia      |              |              |                      |           |
| Cabinet     | 1            | 1            | 1                    | 2         |
| Bai         | 1            | 2            | 1                    | 2         |
| Shanfan     | 1            | 1            | 1                    | 1         |
| Nanzhu      | 1            | 1            | 1                    | 1         |
| Tangli       | 1            | 1            | 1                    | 1         |
| Shirui      | 1            | 1            | 1                    | 1         |
| Yunzhicha   |              |              |                      |           |
| Dengxincao  |              |              |                      |           |
| Fangji      |              |              |                      |           |
| Annotation: The statistical materia medica literature included Annotation of Materia Medica, Revised Materia Medica, Materia Medica of Dietotherapy, Supplements to Newly Revised Materia Medica, Illustrated Classic of Materia Medica, Classified Emergency Materia Medica, Compendium of Materia Medica, Supplement to the Compendium of Materia Medica.

4. Analysis of Pseudo-tea in Materia Medica Literature

Studies have reported the connection and resemblance between pseudo tea and genuine tea. This resemblance can be because of various reasons: (a) similarities in processing and preparation, (b) similarities in decocting or boiling, (c) similarities in administration, such as brewing and steeping of tea, and (d) similarity or complementarity with respect to property and flavor. Hence, mixing of tea or replacement of genuine tea with pseudo-tea is acceptable to the general public.

4.1. Analysing The Similarity In Processing Between Pseudo-Tea And Genuine Tea

The Classic of Tea recorded the tea processing method, which almost completely accorded with “A prescription for substituting tea” in the Medical Secrets of An Official by Wang Tao. Hence, the processing method mentioned in the Classic of Tea possibly originated from the Medical Secrets, confirming a theory that tea was first drunk habitually for medicinal reasons. The author also published an article to convince that the tea processing method is similar to certain food and agricultural production methods, indicating that tea also acts as a type of food. TCM literature grouped herbs processed similar to tea into the tea category. For instance, Prescriptions for Universal Relief records “A prescription of Huaiyecha”, “Steam and bake the tender buds of Huai, and then grind it into powder as making tea.”97 In addition, “A prescription of Zaojiaya” mentions “Pick, steam and roast the tender buds of Zaojia, bake it as the way of making tea.”98 Furthermore,
“A prescription of Shinanya” mentions, “Pick, steam the tender buds of Shinan, then roast it as the way of making tea.” Supplement to the Compendium of Materia Medica compiled by Zhao Xuemin also recorded a plant, Jiaocicha (alternate name “Gaolu”) the leaves of which were processed like tea as follows: “Mix together root and leaf, roast and bake them into tea.”

4.2. Analysing The Similarity In Decocting Or Boiling Between Pseudo-Tea And Genuine Tea

Techniques for brewing tea in the Classic of Tea was the identical to that in “A prescription for substituting tea”, including pestling tea cake into scraps, rolling tea, sifting tea powder, and boiling with salt. TCM literature recorded many herbs being decocted similar to tea. For instance, Prescriptions for Universal Relief mentions “A prescription of Luomo”, which says “Pick and steam Luomo leaves in summer as the way of making tea, then bake it, stir and grind it into powder. Stew the decoction like tea, and take it at no time.” In addition, another prescription used Fangi to cure the prolapse of the rectum as follows: “Bake the drug and then grind it into powder. Stew to make a decoction like tea and drink it.” Furthermore, “A prescription of Shinanya” recorded by Peaceful Holy Benevolent Prescriptions says “Pick, steam, and bake it like making tea, stir and grind the drug into powder. Stew the decoction as the way of tea, and take it.” In addition, “A prescription of Zaojiaya” mentions “Steam and bake it like making tea, stir and grind the drug into powder. Stew the decoction as the way of tea, and take it at no time. It is also good to add some salt.” Thus, we know that pseudo-tea and genuine tea have the same method of decocting and boiling.

4.3. Analysing the similarity in the drinks made using pseudo-tea and genuine tea.

Methods of tea drinking in China involved boiling during the Tang dynasty rule, steeping during the Song dynasty regime, and brewing during the times of the Ming and Qing dynasties. The tea drinking method of pseudo-tea was similar to that of genuine tea. During the Tang rule, tea was pulverized into a powder, boiled with salt in a pot, and then ladled like soup into bowls and consumed. During the Song rule, a tea cake was first ground into a fine powder. Then, boiling water was poured into bowls containing the tea dust, following which the water was stirred with bamboo brush to completely blend the tea with water. Finally, the tea soup was drunk completely and the tea dust was eaten. During the Ming rule, tea preparation became more casual and convenient under the influence of the Mongolians who ruled China in the times of Yuan. Tea was simply brewed with hot water in a tea cup. The drinking method of pseudo-tea also changed with the trend of the times. “A prescription of Zhiquiao” in Tang times mentions, “One Liang of Zhiquiao, grind it into powder, decoct and sip it as tea.” Another prescription for substituting tea involves Jupi: “Stir-fry 0.5 liang of Jupi and then grind it into powder. Stew the powder and take the decoction like tea.” Similar to steeping tea in Song times, a prescription of Pipa mentions “Pipa leaves more or less, cleans the hair with wipes, bakes and grinds drug into powder. Take 3 qian as steeping tea twice or third times each day.” Rose tea can be brewed similar to genuine tea as follows, “Dry rose flowers in the shade, brew and take it like tea.” Thus, the drinking methods of pseudo-tea are still equivalent to the mainstream methods of brewing genuine tea.

4.4. Similarity or complementarity regarding property and flavor between pseudo tea and genuine tea.

TCM literature mentions that taking medicine with tea soup is a common practice as it enhances medical effectiveness. Relevant records can be found in The Peaceful Holy Benevolence Formula, Recordation to save all and Prescriptions for universal relief. In addition to the similarities regarding processing, decocting or boiling, and drinking, pseudo-tea and genuine tea possess similar or complementary properties, flavors, and effects (see Table 5). In terms of drug properties, tea can be generally cold or slightly cold, warm, or hot. In terms of flavor, tea can be bitter, sweet, sour, and pungent. Table 5 shows that tea with bitter taste and cold properties are similar to Diyu, Huai, Zhiquiao and Gaolu. However, the drug properties of Chun and Ju recorded in Compendium of
*Meteria Medica* by Li Shizhen mention that they were all warm, helping to compensate for tea with cold property. Both genuine tea and pseudo-tea are good for improving eyesight, lowering qi, helping digestion, eliminating phlegm and heat, maintaining wakefulness, releasing summer-heat, removing boil, and curing cough. For example, the herbs of Huai and Zhiqiao can improve eyesight, and Gaolu is useful for maintaining wakefulness; furthermore, Ju can eliminate cough. Thus, pseudo-tea has the same effects as genuine tea.

### Table 5. Comparing Medicinal Properties and Actions Between Pseudo Tea And Real Tea.

| Serial number | Pseudo-tea (Chinese pinyin/English name) | Original text | Property, flavor and Effects | Similar effects to real tea | Similar or complementary property and flavor to real tea |
|---------------|----------------------------------------|---------------|-------------------------------|-------------------------------|-----------------------------------------------------|
| 1             | DIYU/garden burnet³⁹⁹                   | Disperse Heat: Stew the decoction with leaf of DIYU, and drink it like tea. | [Property and flavor] Bitter, slightly cold, nontoxic. [Effects] Dispersing Heat | similarity | similarity |
| 2             | HUA/Chinese scholar tree¹¹⁰            | Prescription of Huaye for improving eyesight: Steam one Jin tender leaves of HUA according to the way of stir-baking, grind the drug into powder, stew the decoction and sip it like the way as tea. | [Property and flavor] bitter, cold, nontoxic. [Effects] Improving eyesight | similarity | similarity |
| 3             | ZHIAO/Bitter Orange¹¹¹                 | A prescription of ZHIAO for improving eyesight. One Liang of ZHIAO, grind it into powder, fry and sip as the way of tea. | [Property and flavor] Bitter, sour, slightly cold, nontoxic. [Effects] Improving eyesight | similarity | similarity |
| 4             | GUALUGEN/Gaolu/Big leaf tea¹¹²         | Stew the leaf to make tea to quench thirst, brighten the eye and keep awake. to substitute tea. | [Property and flavor] Sweet, cold, nontoxic. [Effects] Quenching thirsty, improving eyesight, relieving restlessness, keeping awake. | similarity | similarity |
| 5             | LIUYUESHUANG/Qujiecao¹²²               | Local people all drink it like as tea. It says that it is good for treating digestion, activating spleen. It is cold and effective to release summer-heat. | [Property and flavor] Bitter, cold. [Effects]Improving digestion, releasing summer-heat | similarity | similarity |
| 6             | CHUN/Chinese toona¹³¹                   | Tea supplied by people in the south to the government is always mixed with miscellaneous leaves. But leaves of couch grass, reed and bamboo cannot be mixed. Leaves of other plants in the mountain may all be mixed into the tealeaves. It is surprising that even the leaf of Chinese toona and persimmon are mixed. | [Property and flavor] Bitter, warm, slightly toxic [Effects] Washing the affected part to treat sores, scabes, and phlegmon due to invading pathogenic Wind. | similarity | complementation |
| 7             | JU/Ripe tangerine¹³²                   | To help digestion and dissolve phlegm and to eliminate heat in chest. Stir-fry 0.5 liang of JU and then grind it into powder. Stew the powder and take the decoction like tea. | [Property and flavor] Bitter, pungent, warm, nontoxic. [Effects] Helping digestion and dissolve phlegm and to eliminate heat in chest. | similarity | complementation |

Owing to the resemblance between pseudo-tea and genuine tea, TCM literature has grouped both into a tea catalogue. With the rising popularity in tea consumption, tea has become the second-most common beverage after water. Furthermore, TCM literature does not object, warn, or exhort people not to mingle genuine tea with other herbs. As medical workers grouped pseudo-tea in the tea catalogue, ordinary people assumed that pseudo-tea can substitute genuine tea. This is the historic root of the emergence of pseudo-tea, which resulted in its large-scale export from modern China.

### 5. Conclusion

In conclusion, with the geography and climate particularly suitable for tea cultivation, China is the seedbed of tea culture, with a long history and tradition of tea drinking. Tea is one of the most favorite beverages in China. As the tea culture spread to the West during the Ming and Qing times, tea drinking became vogue in the western world, resulting in tea cultivation and processing worldwide. Owing to the increase in demand for tea and backward modes of production, pseudo-tea has become a malady in the Chinese tea export industry. Nonetheless, pseudo-tea culture and diachronic tea drinking have existed since antiquity in China, which had been mentioned in
numerous TCM literature, or substituted genuine tea for drinking, or blended and decocted with genuine tea for drinking, which all constituted the pseudo-tea. However, pseudo-tea in TCM literature has similarity with genuine tea on the way of processing, decocting and drinking. Meanwhile Pseudo-tea also has similarity with genuine tea on enhancing the effectiveness of tea, or remedying deficiency of genuine tea. In conclusion, TCM literature recorded pseudo-tea broadly, identified some herbal drug for substituting tea drink, or mixing and decocting with genuine tea, which all lead to the historical origin of pseudo-tea.

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