Impact of traditional culture on *Camellia reticulata* in Yunnan, China

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**Abstract**

**Background:** Cha-hua (*Camellia reticulata*) is one of China’s traditional ornamental flowers developed by the local people of Yunnan Province. Today, more than 500 cultivars and hybrids are recognized. Many ancient camellia trees still survive and are managed by local people. A few records on cha-hua culture exist, but no studies expound the interaction between *C. reticulata* and traditional culture of ethnic groups. The contribution of traditional culture of different nationalities and regions to the diversity of *Camellia reticulata* is discussed.

**Methods:** Ethnobotanical surveys were conducted throughout Central and Western Yunnan to investigate and document the traditional culture related to *Camellia reticulata*. Five sites were selected to carry out the field investigation. Information was collected using participatory observation, semi-structured interviews, key informant interviews, focus group discussions, and participatory rural appraisal (PRA).

**Results:** Most of the ancient camellia trees were preserved or saved in the courtyards of old buildings and cultural or religious sites. Religion-associated culture plays an important role in *C. reticulata* protection. In every site we investigated, we found extensive traditional culture on *C. reticulata* and its management. These traditional cultures have not only protected the germplasm resources of *C. reticulata*, but also improved the diversity of *Camellia* cultivars.

**Conclusions:** There are abundant and diverse genetic resources of cha-hua, *Camellia reticulata* in Yunnan. Cha-hua is not only an ornamental flower but also has been endowed with rich spiritual connotation. The influence of traditional culture had improved the introduction and domestication of wild plants, breeding and selection of different varieties, and the propagation and dissemination of the tree in Yunnan. However, either some ancient cha-hua trees or their associated traditional culture are facing various threats. The old cha-hua trees and the ethnic camellia culture should be respected and protected since they have made great contributions in the history, and will make more contributions in the future.

**Keywords:** Ethnobotany, *Camellia reticulata*, Cha-Hua, Traditional culture, Biodiversity
into five categories. *Camellia reticulata* Lindl. and its close relatives represent an important group, mostly distributed in Yunnan Province. Camellias are considered in Yunnan to have great economic values. Some are extremely important flowering ornamentals and oil-bearing sources with numerous cultivars [10, 11].

In Yunnan Province, cha-hua is the most common name especially used for *C. reticulata*. For the indigenous people of Yunnan, cha-hua trees have been part of their culture for generations, occupying all aspects of their lives [12]. This special relationship between the local people and the camellias has created a unique culture of the camellias in Yunnan. In many parts of Yunnan, especially in Central and Western Yunnan, cha-hua trees are widely cultivated in ancient temples, scenic spots, public and private gardens. There is overlapping of the distribution of cha-hua and the ethnic groups of Dali, Chuxiong, Lijiang, Tengchong and Kunming, together with the different cultures of Bai, Yi, Naxi, Han and other nationalities, among whom mutual cultural influences have co-existed for a long time.

According to historical records, cha-hua was cultivated or semi-cultivated as early as in the Sui and Tang dynasties (1500 years ago) [8, 13, 14]. The tree also appeared in many poems, inscriptions and other literature [13, 15]. During hundreds of years of cultivation, intra- and inter-specific hybridizations have occurred both naturally and artificially [16]. Through the centuries, the indigenous people of Yunnan have cultivated and appreciated camellias. The impact of traditional culture on cha-hua may be one of the major factors that has supported the conservation of the biological diversity of the species. Currently, more than 500 cultivars and hybrids of cha-hua have been recognized [17]. Ethnobotanical surveys can help to collect important information on the role of traditional culture in enhancing the genetic diversity and conserving *C. reticulata*.

Loss of biological resources, an increasingly globalized society, cultural homogenization and desire for modernization are major factors attributed to the general decline in cultural knowledge about plants, and the disappearance of traditional practices that involve these plants [18–21]. Integration of cultural and biological diversity is often left out of sustainable development plans [19]. Most focused on the maintenance of diversity of cultural species and not their use in sustainable development [22–25].

The investigation of the cultural values of plant species plays a significant role in modern medicine, farming, pharmaceutical and nutritional industrial sectors of a society [26, 27]. The exploration and record of cultural factors of plants are necessary and urgent if this information is to be integrated into sustainable agricultural development plans [28]. Few publications are attributed to the traditional knowledge or perceptions of the local folk and the management and use of camellias linked with local traditional cultural interrelationships. We conducted ethnobotanical surveys throughout the distribution area of *C. reticulata* in Yunnan Province to understand the impact of that traditional culture and ethnic diversity has had on the diversity and conservation of *C. reticulata*.

**Methods**

**Study area**

The study was carried out in five areas of Yunnan Province: Kunming, Dali, Lijiang, Tengchong, and Chuxiong, located in Central and Western Yunnan Province (between 24°12′–26°86′ N and 98°13′–102°42′ E) (Fig. 1) (Table 1).

Kunming is the capital city of Yunnan, with a total area of 2143 km² and a population of about 7.21 million. It is located in the low latitude plateau with an average elevation of 1900 m above sea level. Its annual rainfall is 924 mm with an average temperature of 16.5 °C. Kunming is also the provincial center with numerous diverse nationalities. Nine nationalities have lived in Kunming for a long time, i.e. Yi, Bai, Miao, Hui, Dai, Han, Lisu, Zhuang, and Han.

Chuxiong Yi Autonomous Prefecture is located in the north of the central Yunnan plateau, with an area of 29,256 km² and a population of about 2.684 million. Its average altitude is 1770 m above sea level, and the annual rainfall is 851 mm with an average temperature of 15.7 °C. The minority nationalities (non-Han Chinese) account for one third of the total population, in which the Yi ethnic group is the largest nationality [29].

Dali Bai Autonomous Prefecture is located in northwestern Yunnan, with an area of 29,459 km² and a population of 3.456 million. Its average altitude is 2090 m above sea level, and the annual rainfall is 836 mm with an average temperature of 15.1 °C. Dali was the site of two kingdoms, the Dali Kingdom and Nanzhao Kingdom. It is one of the places where Yunnan culture originated. Majority is the Bai people, together with Yi, Naxi, Miao, Han and others.

Lijiang City is also located in northwest Yunnan, boarding on Sichuan Province. It is in a region where the Qinghai-Tibet Plateau and Yunnan-Guizhou Plateau converges. The area is 20,600 km² and a population is 1.248 million. Owing to its lower latitude and higher elevation (2400 m), the city center of Lijiang experiences a mild subtropical highland climate with an average temperature of 12.6 °C. In Lijiang, there are 20 % of Naxi people, and the others are Yi, Bai, Lisu, Tibetan and Han. The Naxi's Dongba culture is a representative of traditional culture in the region.

Tengchong is a county belonging to Baoshan City, west of Yunnan Province, situated at the southwestern
end of the Hengduan Mountains (elevation varied from 930 to 3780 m). The county seat is 1640 m above sea level, surrounded by a group of young volcanoes, acclaimed as a “Natural Volcanic Geological Museum”, for it reflects the young volcano and terrestrial heat in the most concentrated, magnificent and typical manner. The area of Tengchong County is 5693 km², and the population is 0.594 millions. There are different nationalities living in the country including Han, Yi, Dai and Lisu. Abundant plant resources are distributed in this area because of its special geographical location and climate diversity [30].

**Literature studies**

Prior to fieldwork, relevant literature was consulted to obtain information on the local culture of areas with Camellia. This information was used in choosing the specific study sites. Literature reviews included searches with Google Scholar, PubMed, Scopus, Web of Science and the Chinese databases such as VIP and Wanfang.

**Field surveys**

Ethnobotanical data were collected through different interview methods: participatory rural appraisal (PRA), participatory observation, semi-structured interviews, key informant interviews, focus group discussions and cultural anthropology [31–35]. Fieldwork was conducted from November to December 2012, and from January to February 2014.

Key informant interviews collected information from Camellia experts, scenic spot managers, private garden owners, Camellia enthusiasts, and visitors in Camellia gardens or temples with old Camellia trees. Old Camellia gardens, parks, and temples were visited as well. Particular attention was paid to collecting information of Buddhism culture related to cha-hua. In villages, semi-structured interviews and focus group discussions were predominantly used to obtain information. In total 120 people were interviewed, of which 77 were males and 43 were females. All of them were over 20 years old.

**Results and discussions**

**Religion-associated culture of *Camellia reticulata* Protected by Buddhism**

The cha-hua (*C. reticulata*) has always been denoted as a plant that represents good fortune, and has been treated as a chastity flower in people’s mind. The chastity flowers are closely related to religion [15]. Many groups used beautiful flowers as sacrifices for worship, especially

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**Table 1** Sites to investigate *Camellia reticulata* in Central and Western Yunnan Province

| Cities         | Sites                                                                 |
|---------------|----------------------------------------------------------------------|
| Kunming       | Kunming Botanical Garden; Heilongtan Park; Golden Temple Park; West Hill; Yiliang County |
| Dali          | Yu’er Park; Chongsheng Temple and three Pagoda; Zhang Clan Garden; Dali Bai Autonomous Prefecture Museum |
| Lijiang       | Yufeng Temple;                                                      |
| Tengchong     | Camellia base; Laifeng Mountain; Longhua Temple; Hexie Village      |
| Chuxiong      | Zixi Mountain; E’lu Park                                            |
in the Buddha rituals. According to ancient records after the Yuan Dynasty (AD 1271–1368), C. reticulata became the Buddha flower [17]. Buddhism called Camellia as “Man-tuo-luo”. It is the auspicious flower for consecration when chanting the Buddha “Lotus Sutra”. The Buddhism monasteries planted cha-hua trees to decorate the temple scenery and to show sacred auspicious aura. The unique temperament and flower culture of cha-hua could meet the demands of Buddhist doctrine, and naturally became the best tree for Buddha.

According to our investigations, in the Kunming area, there are 206 ancient trees (or heritage trees) of cha-hua. Figure 2 shows that many of these ancient trees (28%) are maintained in old temples. Among them, 16 ancient camellia trees are maintained in good conditions (Table 2). Five ancient cha-hua trees were discovered in temples, occupying about one third of the total (Fig. 3). The Panlong temple, Huating Temple, Zixi Mountains and Jizu Mountains are famous Buddhist sites of Yunnan. The ancient C. reticulata trees have been well maintained in these shrines. Many ancient Camellia trees were found in Chuxiong’s Buddhism temples and Taoism temples or their relics. In Zixishan Mountains there are many relics of temples. Of the 59 cultivated Camellia types (Table 3), 26 are distributed in the relic of temples (44.8%).

Nature-based religions

Yunnan is the largest province with diversified cultures in China. There are 25 ethnic minorities native to the province, occupying 45% of the nation’s ethnic groups. Most of the local people believe in animism religion or nature-based gods. Before the emergence of Taoism, and the entry into China of Buddhism, the original religion in Yunnan was polytheism [12, 36, 37]. Local religious beliefs, as the main way to spiritual activities in early societies gradually formed a unique aesthetic standard [37–40] affecting the aesthetic value and conservation of C. reticulata.

The Yi ethnic group believed in holy trees or holy forests from ancient legends, and they venerated the camellia as a holy flower. Mishi in Yi language, or ‘lord of the earth,’ refers to a small temple to worship local gods, which is the Yi’s most important deity. Every year when the Yi people performed the ceremony to worship Mishi, they firstly pray to the camellia trees, and then offer up twigs of the camellia tree to the Mishi. They believed that Mishi would bless them with happiness and good fortune. Moreover, the Prayer of the Dragon recited by Bimo, the priest of Yi people, says ‘God from the heaven dispersed three handfuls of seeds in the world, from which camellias grew and flowered all over the hillsides, thus we used the camellia to worship the god and our ancestors’. In every spring festival the Yi people decorated pine branches with camellia flowers in their courtyards as a holy tree and called it ‘tree of earth and heaven’. In Chuxiong, the old Camellia trees can be divided into cultivated types and wild types. Based on our investigations, the trees in the villages, temple yards and relics of temples belonged to the cultivated types. Those distributed in the wild or near the villages were wild types. Of the 58 old camellia trees cultivated within the Chuxiong Yi Autonomous Prefecture, around 10 plants were found from Mishi temples, accounting for one sixth of all old camellia trees in the area. It is an important characteristic that many old camellia trees were conserved in Mishi temples, exemplifying the conservation effect of the Yi people’s culture for this tree species.

In Lijiang, the Naxi ethnic group, like many indigenous groups in Yunnan, have a long history and traditional knowledge of growing food and medicinal plants in homegardens to support their livelihoods [41]. Historically, the Naxi relied on an indigenous system to treat health conditions primarily through consultation with local shaman priests known as Dongba (Dto’mba) as well as through herbal healers and self-care [42–44]. The Dongba believed in sacred sites, where holy forests were worshiped, and all living things were protected. These ecological and cultural important spaces, used for the transmission and preservation of ethnomedicinal knowledge that support community wellbeing and livelihoods, are at risk due to current rapid socio-economic, policy, land use and environmental changes in China [42].

Long history and cultural connotations of Camellia reticulata

Cha-hua was cultivated in China as early as the Sui and Tang Dynasty, over 1500 years ago. The ancient selected forms, particularly with large, double or semi-double flowers, have been propagated for hundreds of years as garden plants. Some extant cultivars dated back to the
| No. | Cultivar names          | Age (year) | Growth | Conservation | Sites                                                                 |
|-----|-------------------------|------------|--------|--------------|----------------------------------------------------------------------|
| 1   | 'Lion’s Head'           | 150        | Good   | None         | Longtou Street, Northern Suburb of Kunming                           |
| 2   | 'Lion’s Head'           | 160        | Health | General      | Golden Temple Park                                                   |
| 3   | 'Early Crimson'         | 170        | Good   | General      | Black Dragon Pool Park                                               |
| 4   | 'Lion’s Head'           | 105        | Health | Good         | The Huating Temple, the largest Buddhist temple in Kunming, located in the Western Hills. |
| 5   | 'Pine Cone Scale'       | 650        | Health | Good         | Panlong Temple, Jinning                                             |
| 6   | 'Lion’s Head'           | 160        | Health | Good         | Zhangfu Village                                                      |
| 7   | 'Early peony'           | 160        | Health | General      | Dongji Village                                                       |
| 8   | 'Early peony'           | 160        | Health | Good         | Dajie Village                                                        |
| 9   | 'Lion’s Head'           | 210        | Health | Good         | Chijiu Town                                                          |
| 10  | 'Pine Cone Scale'       | 210        | Health | Good         | Chijiu Town                                                          |
| 11  | Jing’an Camellia        | 230        | Health | General      | Yiliang County, Jin’an Village                                      |
| 12  | 'Lion’s Head'           | 310        | Bad    | None         | Qidian Town                                                          |
| 13  | 'Lion’s Head'           | 500        | Good   | General      | Songming County, Pijia Village                                      |
| 14  | 'Early Crimson'         | 100        | Health | Good         | Songming County, Dianwei Town                                        |
| 15  | 'Early Crimson'         | 300        | Health | General      | Songming County, Pijia Village                                      |
| 16  | 'Lion’s Head'           | 400        | General| None         | Xundian County, Changchong Village                                   |

Fig. 3 (a & b): Ancient *Camellia reticulata* ‘Shizitou’ in Jindian Park; c: Ancient *Camellia reticulata* ‘Zaotaohong’ in Heilongtan Park
Table 3 Some ancient trees of *Camellia reticulata* in Chuxiong City

| No. | Cultivar names                  | Latitude (N) | Longitude (E) | Elevation (m) | Location                                                                 |
|-----|---------------------------------|--------------|---------------|---------------|--------------------------------------------------------------------------|
| 1   | 'Tongzimian'                    | 24°59'24"    | 101°23'47"   | 1975          | Mishi Temple of Hongqiang Village, Donghua Township                      |
| 2   | 'Zixi' & 'Tongzimian'           | 24°59'54"    | 101°26'03"   | 2260          | Donglin Temple of Zixishan Mountain                                      |
| 3   | 'Chuxiongcha'                   | 24°59'32"    | 101°29'20"   | 1865          | Lu's Family Hall, Daluiy Village, Ziwu Township                          |
| 4   | 'Luchengchun'                   | 25°03'03"    | 101°37'03"   | 1930          | Zhuxichong of Zhaungdian, Donggua Township                              |
| 5   | 'Dalicha'                       | 24°55'25"    | 116°30'48"   | 1880          | Kuame Mish Temple of Donghua Village, Donghua Township                  |
| 6   | 'Zehe'                          | 25°57'09"    | 101°27'05"   | 1878          | Xiaozhe Mish Temple of Bendong Village, Donghua Township                |
| 7   | C. reticulata f. simplex        | 24°57'21"    | 101°01'21"   | 1982          | Shangxinfang Mishi Temple, Sanjie Township                              |
| 8   | 'Chuxiong-dalicha'              | 25°05'20"    | 101°33'20"   | 1880          | Lija Village of Dengguan of Donggua Township                            |
| 9   | 'Chudie'                        | 24°58'09"    | 101°37'15"   | 1921          | Zhuxichong of Zhaungdian, Donggua Township                              |
| 10  | 'Zehe'                          | 25°02'54"    | 101°33'46"   | 1849          | Xiamafang Mishi Temple, Ziwu Township                                   |
| 11  | C. reticulata f. simplex        | 24°59'58"    | 101°24'43"   | 2342          | Xilin Temple of Zixishan Mountain                                      |
| 12  | 'Donglin'                       | 25°00'03"    | 101°24'52"   | 2444          | Nianfotang of Zixishan Mountain                                         |
| 13  | 'Donglin'                       | 25°05'46"    | 101°33'22"   | 2301          | Zhiguanglin Temple of Zixishan Mountain                                 |
| 14  | 'Xiangguocha'                   | 25°01'54"    | 101°23'48"   | 2354          | Shisangcheng of Zixishan Mountain                                      |
| 15  | 'Zhaoxing'                      | 25°01'54"    | 101°23'42"   | 2350          | Shisangcheng of Zixishan Mountain                                      |
| 16  | C. reticulata f. simplex        | 24°59'58"    | 101°24'43"   | 2342          | Xilin Temple of Zixishan Mountain                                      |
| 17  | C. reticulata f. simplex        | 25°00'20"    | 101°25'13"   | 2482          | Xilin Temple of Zixishan Mountain                                      |
| 18  | 'Seben'                         | 25°01'54"    | 101°23'48"   | 2354          | Shisangcheng of Zixishan Mountain                                      |
| 19  | 'Songzike'                      | 25°00'51"    | 101°24'35"   | 2413          | Dajing Temple of Longjing, Zixi Mountain                                |
| 20  | 'Shizitou'                      | 25°05'46"    | 101°33'19.7" | 1880          | Lija Village of Dengguan of Donggua Township                            |
| 21  | C. reticulata f. simplex        | 25°01'53"    | 101°26'15.4" | 1898          | Wangjiayu Mishi, Zixi Township                                           |
| 22  | 'Guomei'                        | 25°01'33"    | 101°36'16.5" | 1839          | Gangeding of Lija of fumin Village, Lucheng Township                    |
| 23  | C. reticulata f. simplex        | 25°00'01"    | 101°24'60"   | 2339          | Guzhulin of Zixishan Mountain                                           |
| 24  | 'Dalicha'                       | 25°00'01"    | 101°24'52"   | 2339          | Nianfotang of Zixishan Mountain                                         |
| 25  | 'Lichan'                        | 25°00'03"    | 101°24'52"   | 2339          | Nianfotang of Zixishan Mountain                                         |
| 26  | 'Zixia'                         | 25°00'03"    | 101°24'52"   | 2339          | Nianfotang of Zixishan Mountain                                         |
| 27  | 'Lingfeng'                      | 25°00'04"    | 101°24'52"   | 2344          | Nianfotang of Zixishan Mountain                                         |
| 28  | C. reticulata f. simplex        | 25°00'01"    | 101°24'60"   | 2333          | Guzhulin of Zixishan Mountain                                           |
| 29  | 'Ziyan'                         | 25°05'46"    | 101°33'24"   | 1875          | Lija Village of Donggua Township                                        |
| 30  | 'Yanzhi'                        | 25°04'39"    | 101°25'03"   | 1950          | Wangjia Mushi Temple of Yunqing village, Qianjing Township              |
| 31  | 'Zibao'                         | 25°00'47"    | 101°24'46"   | 2425          | Gudelin of Zixi Mountain                                                |
| 32  | C. reticulata f. simplex        | 24°43'08"    | 101°00'18"   | 1922          | Damaidivian Temple of Bajiao Township                                   |
| 33  | 'Dalicha'                       | 25°05'47"    | 101°33'24"   | 1886          | Lija Village of Dengguan of Donggua Township                            |
| 34  | C. reticulata f. simplex        | 24°59'59"    | 101°25'06"   | 2317          | Relic of Gondelinel Temple in Zixishan Mountain                        |
| 35  | C. reticulata f. simplex        | 25°00'51"    | 101°24'16"   | 2382          | Songhelin of Zixishan Mountain                                         |
| 36  | C. reticulata f. simplex        | 25°00'03"    | 101°24'52"   | 2339          | Nianfotang of Zixishan Mountain                                         |
| 37  | C. reticulata f. simplex        | 25°00'51"    | 101°24'16"   | 2407          | Qishulin of Zixishan Mountain                                           |
| 38  | C. reticulata f. simplex        | 24°59'25"    | 101°23'48"   | 1975          | Mishi Temple of Hongqiang, Donghua Township                             |
| 39  | 'Ailaohong'                     | 24°26'14"    | 101°10'26"   | 2230          | Xinjiang Village, Eja Township, Shuangbai County                        |
| 40  | C. reticulata f. simplex        | 25°04'53"    | 101°42'05.1" | 1991          | Shitoumiao Mish Temple of Cangling Village                             |
| 41  | 'Zilian'                        | 24°59'55"    | 101°25'07"   | 2279          | Camellia garden of Zixi Mountain                                       |
| 42  | 'Lifang'                        | 24°59'58"    | 101°25'05"   | 2287          | Camellia garden of Zixi Mountain                                       |
| 43  | 'Zhinan'                        | 25°04'55.7"  | 101°39'23"   | 2314          | Guzhulin Temple of Zixishan Mountain                                   |
| 44  | 'Ziyu'                          | 24°59'59"    | 101°24'56"   | 2288          | Guzhulin Temple of Zixishan Mountain                                   |
Traditional cultures

The most popular species

More than 500 cultivars and hybrids of *Camellia reticulata* have been recognized [17]. However, only dozens of improved varieties are common. The most popular ones are the traditional top cultivars (Table 4).

Regional features

Different regions have different cultural atmospheres. People of different ethnic groups with their own traditional culture have enriched the diversity and cultural values of camellia. Dali has rich variety resources of *Camellia*. The Bai people in Dali promoted *Camellia* as the ‘King of Flowers’, and during the annual Lunar New Year from February ninth to fifteenth it was the time of the ‘worship flower fair’. In Dali, every family grows *Camellia* in their home yard. *Camellia reticulata* trees of hundreds years old can be found. More than that, *Camellia* is a symbol of Dali. In ancient times, *Camellia* was the symbol of nobility. Some varieties like ‘Lion’s Head’, ‘Red Gown’ (Gown means official’s robe), ‘Large Carnelian’, are all precious cultivars only nobility and gentry could hold. Nowadays, *Camellia reticulata* is not only an excellent ornamental flowering plant, but also a precious gift for friends.

In our surveys, the most preferred cultivars are also the traditional ones. On every weekend, there is the Cha-hua Market in the old town of Dali (Fig. 4). In the market the price varied from 40 CNY (Chinese yuan) to 300 CNY (ca. 1USD = 6.5 CNY) per seedling. In the season of Spring Festival from December to February, millions of *Camellia* trees bloom in and around the old town, ancient alleys and yards.

In the Zixi Mountains area of Chuxiong, the widely distributed native *Camellia reticulata* trees can be found. The residents of this area are mainly Yi, Miao and Han nationalities. The Yi people honor cha-hua as a holy flower as a sacrifice to heaven and ancestors, and prohibit the climbing of camellia trees or breaking their branches. In the Mishi temple of every village, Yi people plant cha-hua to enjoy their beauty and as a sacrifice to the Mishi (Gods) (Fig. 5). Protecting the camellia trees for this role in local religious activities has served to protect most of ancient camellia trees in Zixi Mountains area.

The Bai and Han nationalities regarded the camellia as a tree that focuses good fortune. They believe the tree can gather aura, and straighten out Fengshui (a form of geomancy). For the Bai and Han nationalities the camellias were planted predominantly in gardens and in family ancestral temples. About 860 years ago, during the Dali

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**Table 3 Some ancient trees of *Camellia reticulata* in Chuxiong City (Continued)**

| No. | Cultivar | Longitude/Latitude | Latitude | Longitude | Location |
|-----|----------|--------------------|----------|-----------|----------|
| 45  | Ziyun'   | 25°00'01"          | 101°24'58" | 2303      | Guzhulin Temple of Zixishan Mountain |
| 46  | Zida'    | 25°00'02"          | 101°24'58" | 2309      | Guzhulin Temple of Zixishan Mountain |
| 47  | Ziwei'   | 24°59'58"          | 101°25'06" | 2311      | Zhiguanglin Temple of Zixishan Mountain |
| 48  | Ziju'an  | 24°59'57"          | 101°24'15" | 2310      | Relic of Gongdelin Temple of Zixishan Mountain |
| 49  | Zhilin'  | 24°59'58"          | 101°25'02" | 2307      | Relic of Gongdelin Temple of Zixishan Mountain |
| 50  | Ziqiang' | 24°59'57"          | 101°25'04" | 2297      | Relic of Gongdelin Temple of Zixishan Mountain |
| 51  | Zide'    | 24°59'57"          | 101°25'04" | 2296      | Camelli garden of Zixi Mountain |
| 52  | Meigehong| 24°59'57"          | 101°25'02" | 2299      | Camelli garden of Zixi Mountain |
| 53  | Ziting'  | 24°59'57"          | 101°25'10" | 2312      | Relic of Gongdelin Temple of Zixishan Mountain |
| 54  | Ozhichun' | 24°59'57"         | 101°25'13" | 2274      | Donglin Temple of Zixishan Mountain |
| 55  | Chuxiong-dalicha' | 24°38'49"    | 101°22'44" | 1900      | Tanshan of Zheli Village, Dajidi Township |
| 56  | Zifen'   | 25°00'20"          | 101°25'14" | 2442      | Ziding Temple of Zixishan Mountain |
| 57  | *C. reticulata* f. simplex | 24°49'29"    | 101°06'44" | 1940      | Xiajacun Village, Zhongshan Township |
| 58  | Dalicha' | 24°59'55"          | 101°30'52" | 1896      | Lijia of Zhongben Village, Lucheng Township |
| Cultivar names          | Flower type       | Flower color      | Blooming period       | Remarks                                      |
|------------------------|-------------------|-------------------|-----------------------|----------------------------------------------|
| ‘Dwarf Rose’           | Rose double       | Peach blossom     | Feb–Apr               | One of the eight famous cultivars in Dali   |
| ‘Baby Face’            | Rose double       | Pinkish white     | Mar–Apr               | One of the shallowest color cultivars        |
| ‘Purple Gown’          | Peony double      | Prune             | Feb–Mar               | One of the darkest color cultivars          |
| ‘Dali Camellia’        | Peony double      | Red                | Jan–Mar               |                                              |
| ‘Pine Cone Scale’      | Rose double       | Red                | Jan–Mar               |                                              |
| ‘Peony Camellia’       | Peony double      | Peach pink        | Feb–Mar               | Later blooming.                             |
| ‘Large camellian’      | Peony double      | Multi-color       | Jan–Mar               | Local name: pork blood mix tofu             |
| ‘Chrysanthemum Petal’  | Rose double       | Pink               | Dec–Mar               | A very popular one                          |
| ‘Reticulate Leaf Spinel Pink’ | Semi-double    | Silver red        | Feb–Apr               |                                              |
| ‘Thick Leaf Butter Wing’ | Semi-double      | Red                | Jan–Apr               |                                              |
| ‘Tsingan Camellia’     | Peony double      | Red                | Feb–Mar               |                                              |
| ‘Guomei Camellia’      | Semi-double       | Red                | Jan–Mar               | In memory of a famous botanist, Prof. Guomei Feng |
| ‘Lion’s Head’          | Peony double      | Prune             | Jan–Mar               | Local name: nine stamens eighteen petals    |
| ‘Early Crimson’        | Semi-double       | Peach blossom     | Dec–Mar               | The earliest blooming one                   |
| ‘King Peony’           | Peony double      | Peach blossom     | Oct–Feb               | Maximum number of petals                     |
| ‘Reticulate Leaf Crimson’ | Semi-double      | Red                | Feb–Apr               |                                              |
| ‘Treasure Pearl Camellia’ | Peony double    | Red                | Feb–Mar               | Ancient Camellia cultivar                   |
| ‘Willow Leaf Spinel Pink’ | Semi-double      | Silvery red       | Feb–Mar               |                                              |

Table 4: Top traditional cultivars of *Camellia reticulata*

Kingdom period, the Prime Minister Gao Liangchen and his wife abdicated to Weixi Mountain, which became their fief where they had lived in seclusion since 1150. They built their castle on the mountain (know as ‘Prime Minister’s House in the Mountain,’ or Shi Sangchen) together with a Buddhism temple. It is the first known record of the cultivation of camellia trees in the region. From 200–500 years to the Ming and Qing dynasties (1368–1855), Zixi Mountains became a sacred Buddhist site, with nearly 100 temples, nunneries, and sacred groves. There are many camellia cultivars growing on temple’s relics, including the cultivars: ‘Zixi,’ ‘East Lin,’ ‘West Lin,’ ‘Dali,’ ‘Zibao,’ ‘Songzike,’ ‘Baby Face,’ ‘Lucheng-chun’. The ancient Camellia trees are found in the temples and on the relic site of buildings, although these places were destroyed in the war in 1856–1872. In this area, hybridization of the artificially cultivated camellia in the area with the wild *C. reticulata* (with single petals) has frequently occurred resulting enriching the diversity of *C. reticulata*. The Zixi Mountains of Chuxiong created a center of *cha-hua* natural variation.

The Yufeng Temple in Lijiang, located in the south of Yulong Snow Mountains is famous for its *cha-hua* tree named “Thousands of Camellia Flower”. The Yufeng Lamasery was built at the end of Qing Dynasty, which is one of the five well-known lamaseries in Lijiang. The yard of main hall of the temple was built in the architectural style of the Qing Dynasty with the traditional Chinese courtyard design, a combination of Tibetan Buddhism and Han Buddhism architectural styles. This famous *Camellia* tree was planted in the year of Chenghua, Ming Dynasty (around AD 1465–1487) in the northwest garden to the main hall. Two branches called “happiness trees” twisted to make a main trunk. In the spring season, the camellia tree blossoms are in full splendor, and this tree has been honored by the name of the King of the *Camellia*. An old Naxi man, Nadu Lama, has guarded this precious tree his entire life (Fig. 6).

### Potential cultural significance

**Cultivars named for good fortune** Chinese names for most *C. reticulata* cultivars are according to the morphological characteristics of their respective flowers. Most of their Chinese names have meanings that imply good luck. Different colors of petals represent different meanings. ‘purple gown’ is a very popular and traditional variety with prune color. A family with politicians or businessmen in their family will grow this cultivar to bless them to be successful in official careers or business ventures. Other examples of cultivar names with positive means are ‘Jade Belt Purple Gown,’ ‘Vermilion Purple Gown,’ and ‘Red Splendid Gown’. Some Camellia cultivar names are related to the Buddhism, for example ‘Buddha Lotus’, which means the flower morphology of this cultivar is similar to lotus, the Buddhist flower.

**Allusions** The cultivar ‘Lion’s Head’; comes from the famous Novel of Octave, where Devas and Nagas mentioned a cultivar with ‘nine stamens and eighteen petals’.
The cultivar ‘Mi Yi Lu’ was adopted from a Yi girl named Miyilu who comes from the most beautiful love story in Yi communities. ‘Guomei Camellia’ is a cultivar in memory of Professor Guomei Feng, a famous botanist who devoted himself to study *Camellia* for many years.

**Impact from Southwest Silk Road**

The old *Camellia* trees of cultivated type were mainly distributed in the villages and temples in Kunming, Dali, Chuxiong, Fengqing, and Tengchong along the old Southwest Silk Road. This old road promoted not only the development of commodity circulation and trade, but also the cultural exchange including religion and humanity, especially the Buddhism, of which the cultivation of the camellia tree was closely linked.

**Conclusion**

As one of the most popular ornamental flowers in China, cha-hua or *Camellia reticulata* much attention has been paid to its commercial cultivation and breeding. The
conservation and use by traditional cultures of *C. reticulata* has been predominantly ignored. This paper studied the influence of traditional culture on the introduction and domestication of wild *Camellia* species, breeding and selection of different varieties, and their dissemination in Yunnan Province.

The process of *C. reticulata* introduction and domestication has relied on local different ethnic groups and their traditional beliefs and practices, which has been recorded in a great number of historical documents. The ancient *Camellia* trees continue to be protected in the yards of old temples and other historical sites. *Cha-hua* culture has penetrated into many components of the social lives and ethnic communities. Yunnan people are proud of this valuable diversity of *cha-hua* and continue to protect it and use it in the tradition culture of their daily lives.

**Consent**

Permissions were provided by all participants in this study and with the nationalities interviewed for this study. Consent was obtained from the participants prior to this study being carried out. Nadu Lama declared that he has no objection to the publication of his pictures (Fig. 5) in the journal. The authors have all copyrights.

**Competing interests**

The authors declare that they have no competing interests.

**Authors’ contributions**

TX conducted the field investigations and wrote the draft manuscript. CL designed the study, participated in fieldwork and revised the manuscript. JdR and DJ edited the English and provided comments. HG and LM assisted the field investigations. All authors read and approved the final manuscript.

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