

The Origin of the Tea Plant

By MINORU HASIMOTO

Faculty of Agriculture, Meijo University
(Tenpaku, Nagoya, 468 Japan)

The tea plant (*Camellia sinensis* O. Kuntz.) has been cultivated as a beverage for more than two thousand years. The tea as a wild plant is thought to have originated in the mountain range between Yunnan in China and Assam in India, but this is mere speculation.

In general the tea plant is classified into two major variations: the small-leaf plant from temperate regions and the large-leaf plant from tropical regions. However, intermediate types can also be found, and due to remarkably large environmental variations, various types of tea leaves are produced.

The fact that tea leaves have been classified into two major types has led researchers strongly to conclude that tea has two different birth places. However, after establishing a numerical taxonomy and undertaking multivariate and cluster analysis, the author has come to support the existence of one origin for the tea plant, centered, the author believes, in Yunnan and Sichuan in China (1978).⁷⁾

Having recently visited Sichuan and Yunnan twice for research, the author is even more certain that the tea plant has only one origin.

The theory of two places of origin

The home of the tea plant is East Asia, and indigenous plants can be found in Japan, China, Burma, India, and other countries. The place of origin for all tea plants is thought to lie in the mountain range between Yunnan in China and Assam in India. Cohen Stuart (1919)³⁾ noted, however, that considerable differences in character existed between tea plants indigenous to Assam in India and those in China, and asserted that small-leaf varieties in China originated in Eastern and Southeastern China where they were cultivated,

while large-leaf varieties originated independently in India and Yunnan. Harler (1933)⁵⁾ agreed with Cohen Stuart, reporting that the intermediate types were all hybrids of Chinese and Assam types. Since these two studies, tea plants have been classified generally into two major varieties: var. *sinensis* from the temperate regions and var. *assamica* from the tropical regions. Thus, a two-location origin of the tea plant has become the accepted theory.

Kingdon-Ward, an English botanist who spent his life exploring from mid-China to Southwest Asia, reported in 1950⁸⁾ that the China race had come from the north around the Pacific seaboard (Japan seaboard?) at the time of the glacier age, that the Assam race might have come by a direct route from Central Asia, and that, if this view was correct, the China type had one origin and the Assam and Cambodia races another. According to the Kingdon-Ward report, the tea spread from primary and secondary centers. It is important to note that Kingdon-Ward located the primary center in Central Asia, despite the fact that the tea plant is originally a tropical plant. Noting the distribution of tea plants in Asia today, their report would seem to have located the primary center too far north.

The theory for one place of origin

In posing one place of origin, Simura reported in 1935⁹⁾ that both Chinese and Assam varieties had the same chromosome number ($2n=30$), and hence did not differ cytogenetically. According to his report, others have supported his view, but it has not been asserted strongly enough.

Eden, in his book "Tea" (1958)⁴⁾, described the spread of the tea plant as a fan-like move-

ment outward from a growing center near the source of the Irrawaddy River into Southeastern China, Indo-China, and Assam in India. However, he has not presented a paper proving one place of origin.

Thus far the author has clarified the morphological character of tea plants in Japan, Taiwan, Burma, and Assam in India through his field work. These plants showed continuous variation, in a broad range of areas centering around the Tropic of Cancer from Southeastern China (including Taiwan) to India. The author proposes that an origin of the tea plant could have been centered in Sichuan, Yunnan, and Guizhou, but the author is critical of the theory for two places of origin.⁶⁾ Still, our theory of continuous variation seemed too subjective at first, so I attempted to employ cluster analysis in order to examine the relationship among leaf characteristics more objectively. The results of this analysis generally produced a classification into four groups. When the varieties within each group were studied by region, the tea plants at Mt. Meiyuan in Taiwan and the Naga Hills in India showed close similarities, though these places are widely separated geographically. Also, in the same group, Chinese variety and Assam variety are included together. From such observations, the author proposes one place of origin for the tea plant and locates it in Sichuan and Yunnan, lying between South-eastern China (including Taiwan) and Assam in India.⁷⁾

Specialists in China, where tea was first drunk, also support the idea of a single place of origin for tea. Chen Chuan and Chen Cheng-kou (1979),¹⁾ for example, studied the genetic character of wild tea plants and made biochemical analyses which suggested that tea's origin lay in Yunnan where a large-leaf variety is produced. In addition, Zhuang Wan-fang (1981)¹⁰⁾ reported that tea plants including leaves, flowers, and seeds showed marked differences from one another in the Dalou Mountain range which adjoins Sichuan, Guizhou, and Yunnan. He concluded that Yun-gui Kaoyuan (the plateau of Yunnan and Guizhou) was the place of tea's origin. In March of 1982 the author met in Beijing with Wu Juenong, who is honorary chairman of the Tea Society of China, and he

informed us that neither southern Sichuan nor northern Yunnan was affected by the glacier age, so that many ancient plants have survived there. According to him, the place of tea's origin is Yun-gui Kaoyuan, lying from southern Sichuan to western Hunan and northern Guangxi.

Recently, a most remarkable thing is that giant wild tea trees have been found one after another deep in the mountains and woods in the Yunnan, Sichuan and Guizhou areas.²⁾

Gigantic tea plants in southwestern China

On two separate occasions, August of 1980 and 1983, the author made trips for research on the tea plant to Kunming in Yunnan province and south to Xishuangbanna on the border between Burma and Laos. According to a report by the Yunnan Tea Import and Export Company, the giant tea plants of Yunnan are found in 19 places (Fig. 1). Except for five locations in Sichuan and Guizhou, these plants are concentrated in the upstream areas of the Salween, Mekong, and Song-koi Rivers. The largest among them is found at Mt. Dahei in Monghai, Xishuangbanna, and is called the "King Tea Tree". It was 32.1 m high when discovered in 1961, but was struck by a typhoon that blew down the top half, so it now stands 14.7 m tall. Its trunk is 2.9 m in circumference and its age is estimated to be more than 1700 years (Chen et al. 1980). There is another giant tea tree which is 5.5 m high and 800 years old in a place 1100 m above sea level on Mt. Nanlo (summit 1300 m above sea level) in Monghai. Considering the environment, it is thought to be a relic species of the cultivated plant. Tea-leaf plucking is carried on at present. Though it is not high, it puts out branches 10 m long. The trunk at the base is 138 cm in circumference, but, since the tree is almost completely hollow, it must fall down in the near future (Plate 1). Incidentally, all the tea plants I examined in southern Yunnan belong to the var. *assamica* in taxonomical classification. We could find none of the var. *macrophylla* reported by Cohen Stuart (1919).

In China wild gigantic tea trees first dis-

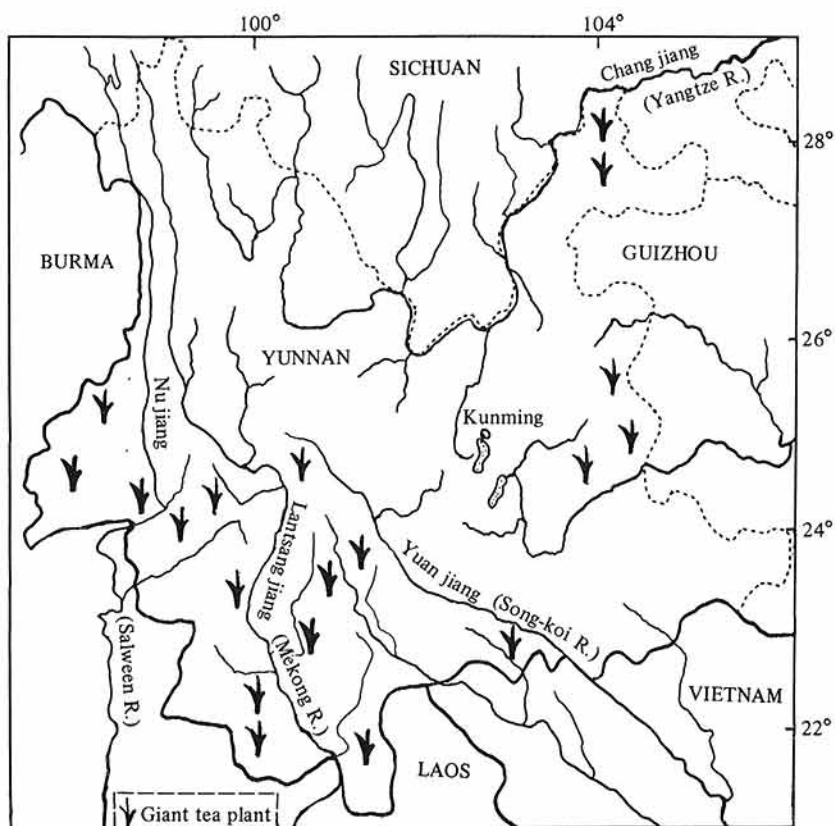


Fig. 1. Distribution of wild tea plants in Yunnan province
(by Yunnan Tea Import & Export Corporation, 1980)



Plate 1. A gigantic tea plant in the Mt. Nanlo, Yunnan province

covered in 1939, particularly in the southwest region of the country. A community of more than ten plants 6 m high has been found at Mt. Laoying in Wuchuan, Guizhou. Gigantic individual plants have also been found in the Yun-gui Kaoyuan area. From these facts, the origin of the tea plant would seem to be centered in the area identified by most Chinese tea specialists; that is, Yun-gui Kaoyuan. In addition, the fact that this southwestern district is the world center of Theaceae also seems to confirm it as the tea plant's origin.

Finally, as Kingdon-Ward (1950)⁸⁾ advised, research on the origin of the tea plant must include consideration of the history of population migration, and the time, place, and nationality of wild tea's first cultivators and drinkers.

References

- 1) Chen, Chuan & Chen, Cheng-kou: Yunnan province of China is the tea's homeland. *Scientia Agricultura Sinica*, 1, 91-96 (1979) [In Chinese].
- 2) Chen, Xingyan et al.: Gigantic tea plant in China. *J. Hunan Agr. Col.*, 1, 55-66 (1980) [In Chinese].
- 3) Cohen Stuart, C. P.: A Basis for tea selection. *Bull. Du Jardin Bot. Buitenz.*, 1, 193-320 (1919).
- 4) Eden, T.: Tea. Longmans, London, 1-3 (1958).
- 5) Harler, C. R.: The culture and marketing of tea. Oxford Univ. Press, London, 3-10 (1933).
- 6) Hasimoto, M.: On the distribution and morphology of wild tea plant. *Jpn. J. Trop. Agr.*, 16, 297-301 (1972) [In Japanese].
- 7) Hasimoto, M. & Simura, T.: Morphological studies on the origin of the tea plant. V. A proposal of one place of origin by cluster analysis. *Jpn. J. Trop. Agr.*, 21, 93-101 (1978) [In Japanese with English summary].
- 8) Kingdon-Ward, F.: Does wild tea exist? *Nature*, 165, 297-299 (1950).
- 9) Simura, T.: Cytological investigations in tea plants. *Proc. Crop. Sci. Soc. Jpn.*, 7, 121-133 (1935) [In Japanese with Esperanto summary].
- 10) Zhuang, W.: Where is the origin of tea in China. *J. of Zhejiang Agr. Univ.*, 7, 111-115 (1981) [In Chinese with English summary].

(Received for publication, October 31, 1984)