Wild Teas of Assam and North East India

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Abstract

India is one of the largest tea producers in the world. In India the state of Assam is a large tea growing belt in the world where the renowned Assam teas grow. The tea was discovered growing wild in Assam by the British. Before the discovery of wild teas the local population of Assam, some of the tribal people, were in the habit of drinking tea in their indigenous method of preparation since time immemorial. Since the early part of the nineteenth century, discovery of ‘wild’ plants of Assam and Cambodia races of tea were recorded. In Assam and the North-East area at present in all the explorations carried out to the original tea areas, hybrids of the three main varieties of tea are found. The true to type original Assam variety is yet to be discovered. Existence of wild tea plants in the forests of Assam has been a subject of much curiosity and collection of such germplasm would greatly assist research on plant improvement by the scientists.

Keywords Wild teas; Indigenous; Germplasm; Singphos; Tribal; Infusion

Introduction

The India is a major producer of tea in the world and the state of Assam is a large tea growing belt in the world. Tea was discovered growing wild in Assam by the British in early 1800. The local population of Assam, some of the tribal people, were in the habit of drinking tea in their indigenous method of preparation since time immemorial. Subsequent tea cultivation in Assam has made it a major agro-industry of the state and the finest liquorining quality of black teas in the world are produced here. Assam has about 10 per cent of the area under tea in the world and produces about 13 per cent of the of the world tea production. The name ‘Assam’ is synonymous to the best liquorining quality black tea in the world. Existence of wild tea plants in the forests of Assam has been a subject of much curiosity and collection of such germplasm would greatly assist research on plant improvement by the scientists.

A team of Tocklai scientists undertook an exploratory study of the Upper Assam area in the district of Tinsukia extending up to adjoining Bordumsa area of Arunachal Pradesh in end 2012 to search for wild teas in those areas and came across several places with wildly growing teas in natural state.

Place of Origin of Tea, Kinds of Tea and Their Spread

The place of origin of tea is a matter of speculation and still not fully settled. Though it is widely believed that the place of origin is China, much information is not available and wild teas were not discovered there, tea being in cultivation for more than 2000 years. The situation is different for the Assam and Cambodia races of tea. Since the early part of the nineteenth century, discovery of ‘wild’ plants of these two races were recorded from Assam, Manipur, Mizoram, Burma, Thailand and the entire Annamite chain from the extreme north of the gulf of Tonkin to South Vietnam and Laos. However, it could not be conclusively ascertained if the plants were really wild or relics of migratory tribes inhabiting the regions (Barua, 1989).

While focusing at the origin of tea, the three races of tea are to be understood. The botanical name of tea plant is Camellia sinensis (L) O. Kuntze. It has three races, viz. Assam tea plant, Camellia assamica (Masters), China tea plant, Camellia sinensis L and Cambodiensis or Southern form, Camellia assamica sub sp. Lasiocalyx (Planch.MS) (Barua, 1989). Based on morphological characteristics of size and shape of the leaves, these races

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can be differentiated. India, China and Vietnam are the three countries of the world where the three main cultivated varieties of tea are believed to have originated—Assam in India (Indo-Burma region), China in South China and South Vietnam for Cambodiensis or Southern form. It is believed that the three races of tea dispersed to three different areas from its place of origin. According to Wight, tea plant probably originated in the region around the point of intersection of latitude 290 North and longitude 980 East, near the source of the river Irrawaddy, which is the meeting ground of Assam, North Burma, South-West China and Tibet. The great rivers of South-East Asia flow through this region, Yangtze Kiang, Mekong, Irrawaddy and Luhit dispersed tea to different areas form the place of origin (Barua, 1989).

Kingdom-Ward postulated that tea possibly originated in Central Asia further North of the Irrawady basin, as far north as of the 60th parallel or even within the arctic circle or further south in the Altai, or somewhere in Mongolian plateau. According to him, the Assam type is the most wide spread type of tea; the China race is the most divergent type while Assam and Cambodia races are far less unlike in appearance. It is possible that China race came from the North by the Pacific seaboard during the glacial shake out and the Assam race took the more direct route from Central Asia to reach the secondary centre near Irrawaddy. If this is so then the China type had one origin and the Assam and the Cambodia type together had another common origin. From the secondary centre, the Assam race moved South-East to Indo-China and South-West to Assam (Kingdom-Ward, 1950). As all the three races hybridise freely, it is almost impossible to find any of the three races in pure state even in the terminal areas of their dispersion (Barua, 1989).

Bendall observed that the whole genus Camellia seems to have evolved in southern China. It is doubtful whether any truly wild tea still exists. In Yunnan there are patches of tea which appear to be wild, with occasional large tree which is several hundred years old. It is difficult to decide whether these plants are truly wild or residue of earlier cultivation by native people. Charles Bruce discovered large number of tracts of apparently wild tea in Assam. However, Kingdom Ward noted that it might be spread by the Shan tribes migrating through Burma, Manipur to Assam. There was an ancient route connecting Yunnan to Assam through Burma in use at least as early as the second century BC. Kingdom-Ward later found one or two isolated tea plants growing in the jungle of Mishimi Hills in Arunachal Pradesh which could not have been relics of former cultivation. Origin of the two main varieties of *Camellia sinensis* var. assamica and var. sinensis is a puzzle. It is not ascertained if one is derived from the other or they both descended separately from the same precursor. It is not concluded if they evolved naturally, or one (probably var. sinensis) was result of human selection from the other, China variety being more hardy. In Yunnan itself latitude 250N provides a very rough demarcation between the two varieties, assamica to the South and sinensis to the North (Bendall, 2011).

Absence of a clear distinction between wild and cultivated tea plants in North Eastern India tend to blur the limits of natural taxa. Tea forms, characteristics of the Brahmaputra valley are indistinguishable from those characteristics of indigenous cultivation in the Shan states (Singh, 2015).

**Wild Teas in Assam- extent, Discoveries, Latest Findings on Wild Tea and Possibilities**

In 1815, Colonel Latter first reported to have noticed tea drinking habits among the tribes of Assam (Griffiths, 1967).

It was in 1823, tea plant was discovered in Assam when Major Robert Bruce came to know about the existence of wild growing tea in Assam (Griffiths, 1967). Major Robert Bruce was believed to have seen tea plants growing wildly in some hills near Rangpur (present Shivasagar), then the capital of Assam. Major Robert Bruce, an adventurer and trader, went to Upper Assam in search of trade as an agent of the dethroned Ahom King of Assam, Purandar Singha, with the permission of the East India Company. He made an agreement with a Singpho Chief, Beesa Gaum, to supply him some tea plants and seeds during his next visit in the following year. Assam was then under Burmese occupation and in 1824 war broke out with them. Major Robert Bruce died in 1824 before he could collect the plants. But he must have confided his agreement with the Singpho Chief to his younger brother, Charles Alexander Bruce, before his death (Barua, 1992). According to Baildon (Baildon,1877) and Hannangan (Hannangkan,1987). Robert Bruce was informed about the tea plants growing wild in Assam by a local noble man,
Maniram Dutta Barua known subsequently as Maniram Dewan as he saw the indigenous plants and he also introduced Bruce to the Singpho Chief (Barua, 1992). Beesa Gaum lived in a Singpho village in Upper Assam’s Tinsukia district.

Charles Alexander Bruce was midshipman in service of the East India Company. He offered his services to David Scott, agent to the Governor General in Assam, against the Burmese invaders and was sent to Sadiya, Assam, which was near the home of the chief with whom Robert Bruce had made the agreement. He collected the promised tea plants and seeds and handed them over to David Scott. Scott planted some of them in his own garden, sent some to the Government of India (Commissioner F. Jenkins at Gauhati) and forwarded the balance to Dr N. Wallich, Botanist to the East India Company and Superintendent of Botanical Garden, Calcutta, with a letter dated 2nd June, 1825, which stated, “I have the pleasure to forward some leaves and seeds of a plant which the Burmese and Chinese at this place concur in stating to be the wild tea.” Dr Wallich identified the leaves and seeds as belonging to Camellia family but did not consider them to be of the same species as the tea plant of China (Griffiths, 1967).

In 1831, Lieutenant Charlton, who was serving in Assam, collected some tea plants from Sadiya and sent them to the Agricultural Society, Calcutta, but these plants unfortunately died and failed to secure official recognition as tea from the experts (Griffiths, 1967).

Meanwhile, British trade relation with China became uncertain and considering the importance of tea in English life, they were considering the feasibility of starting tea cultivation in eastern colonies. A Tea Committee was formed in 1834 by Lord William Bentinck, Governor General of India, to advice on possibility of commercial cultivation of tea in India. In a meeting of the Tea Committee in February, 1834, decided to introduce tea plants from China in the sub-Himalayas and Nilgiris and issued a circular local officials calling for information on soil and climatic conditions of the areas (Baruah, 2008).

Captain F. Jenkins, agent to the Governor General for the North-East Frontier, replied informing that indigenous variety of tea plants were found to be growing ‘in every part of this hill country; and within our jurisdiction in the Singpho district of Beesa’. Lieutenant Charlton, an assistant of Jenkins, also wrote that the species found near Beesa may be a spurious or even a Camellia and people there had the habit of drinking an infusion of it and hence, introduction of Chinese plants into Upper Assam would be successful (Griffiths, 1967).

Charlton again sent some seeds and leaves of tea trees found in the Upper Assam area to Jenkins and those were sent to Dr Wallich. However, this time Dr Wallich and the Committee were at long last convinced. The Committee informed the Revenue Department of the Government that tea growing wild in Assam is genuine tea and identical to China. The Committee finally announced to his Lordship in Council on 24 December, 1834 ‘...that the tea shrub is beyond all doubt is indigenous in Upper Assam, being found there, through an extent of country of one month’s march within the Honorable Company’s territories, from Suddya and Beesa, to the Chinese frontier province of Yunnan, where the shrub is cultivated for the sake of its leaf. We have no hesitation in declaring this discovery to be by far the most important and valuable that has ever been made on matters connected with the agricultural or commercial resources of this empire.’ (Griffiths, 1967).

Charles Alexander Bruce who was promoted as Superintendent later was the pioneer of the tea industry of Assam. In the meantime, he extensively explored the forests of Assam particularly in the country of the Singphos, on the south side of the Brahmaputra, along and down the river Buri Dihing and found wild tea growing there and at other places like Phakial, Tingri, etc. He made friendship with different tribal chiefs and cleared jungles and made contracts with the gaums (tribal chiefs) with the assurance of teaching them the method of cultivation and manufacture and subsequently buying tea from them. In addition to plantations at Jaipur and Chabua, Bruce set up nurseries at Chota Tingrai and Hukanpukri and he was convinced of its commercial exploitation by 1840. The industry grew steadily and Bruce’s from the tea tracts produced from Assam tea plants and manufactured by the Chinese experts worked by him showed that production in 1838 was 4,220 lb, 5,274 lb in 1839 and it was expected to reach 11,160 lb in 1840 (Baruah, 2008).
The first consignment of a small of tea made in Assam was sent to Calcutta for testing as reported in ‘Calcutta Courier’ on November 21, 1836 that ‘a small quantity of tea (of green species, from indigenous seed) prepared at Suddya in Assam by the Chinese tea planters brought around by Mr Gordon has arrived in Calcutta’ and was ‘pronounced good’. Another specimen sent two months later prepared by the Chinese out of season to teach manufacturing were ‘considered passable’ (Griffiths, 1967).

The large numbers of tea tracts discovered by Charles Alexander Bruce during 1820s to 1830s were believed to be almost certainly clumps of cultivated tea abandoned by migratory hill tribes, namely the Singphos, Muttocks( presently as the Morans). These tribes usually followed a shifting system of cultivation known as jhuming (slash and burn agriculture), where they cleared a virgin area and raised crop for a number of years and then abandoned it to move to clear another virgin area for new cultivation. The inhabitants of Northern Burma were known to have used tea as a vegetable (letpet tea) as well as for making a drink out of it. These tribes with Mongoloid features original inhabitants of Burma migrated to Assam and Arunachal Pradesh, also lives in Indo-Burma border region of Kachin. According to a description of John M’Cosh on Indian tea (1837), “The tea tree, the identical tea of China, grows as favourably upon the mountains possessed by the dependent hill tribes the Khangtis, Singphos and Muttocks, as in the adjoining provinces of China itself. Tea is the favourite beverage of these tribes and is constantly drunk by them.” (Baruah, 2015).

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In 1855, indigenous tea plants were found in the Chandkhani Hills in Sylhet and tea plants were also found growing wild in a number of places along Khasi and Jaintia Hills where they border the Surma Valley (Harler, 1933).

In Assam and the North-East area at present in all the explorations carried out to the original tea areas, hybrids of the three main varieties of tea are found. The true to type original Assam variety is yet to be discovered. If wild Assam variety of tea exists even now in remote, inaccessible earlier unexplored areas is being looked into. Recently in December, 2012, a team of Tocklai Experimental Station under the leadership of the author of this paper extensively visited the Upper Assam area from Margherita of Tinsukia district to Bordumsa of Arunachal Pradesh with the help of local Singpho guides in search of wild teas and for collection of germplasm. The team was successful in locating many areas with ‘wild’ teas covered with jungle in the forests. However, if the plants were wildly grown or remains of earlier cultivated areas of Singpho people could not be ascertained. The areas where such teas were found were Uloop, Inthem, Dooarmara, Ketetong, Panbari, Bordoomsa(Arunachal Pradesh), etc. (Bhattacharyya, 2013). The tea plants were found to attain a height of about 20 feet and the local people even collected seeds from those plants and planted in their vicinity and even pruned the naturally grown such plants to bring under commercial cultivation. They mentioned that some of those old plants yielded better than others and were virtually free from pests and diseases. The germplasms were collected from the surveyed areas and collection from Bordumsa area were broad leaf, light coloured Assam type with high pubescence in the bud (Borthakur, 2012).

Recently, in a major breakthrough wild tea plants were found for the first time in Ingching Langso and Songlithi Anglong areas of remote dense forest of Sonhilthi hills of Karbi Anglong (Correspondent, 2014). There has been no earlier record of existence of wild tea plants in that area or it was known to people.
The areas with possibility of finding such wild teas in Assam are the border areas Miao of Arunachal Pradesh, Khonsa, Mishimi Hills and Tirap district of Arunachal Pradesh, Mon district of Nagaland, etc. There is scope of exploration of these and Indo Myanmar areas in search of wild teas. High population pressure, lack of awareness are some of the reasons which destroyed tea plants near human habitation in the North Eastern India.

**Molecular Studies on Origin, Domestication and Relationship of Cultivated Species**

Molecular studies on the origin, domestication and relationship of the three main cultivated types of tea, viz. China type, Assam type and Cambod type are lacking. A recent genetical study using molecular marker carried out by an international team of scientists published in the journal ‘PLOS One’ concluded that China type tea, Chinese Assam type tea and Indian Assam type tea are likely the result of three independent domestication events from three separate regions across China and India. Out of 392 samples that were collected from China and India for the study, 300 samples were from China covering 14 main tea growing provinces consisting of Camellia sinensis var. sinensis (China type tea), Camellia sinensis var. assamica (Assam type tea) and also ancient trees of China type tree and Assam type tea, and the 92 Indian tea samples included China type tea, Assam type tea and Camellia assamica subsp. lasiocalyx (Cambod type tea). Total genomic DNA was extracted from each sample and twenty three nuclear microsatellite markers were used to investigate the genetic diversity, relatedness and domestication history of cultivated tea in both China and India. High levels of genetical diversity were observed for all tea types in both countries. The cultivars clustered into three distinct genetic groups (i. e. China tea, Chinese Assam tea and Indian Assam tea) based on structure, PCoA and UPGMA analyses with significant pair wise genetic differentiation, corresponding well with their geographical distribution. A high proportion (30%) of the studied tea samples were shown to possess genetic admixtures of different tea types suggesting a hybrid origin for these samples, including the Cambod type. The study concluded that Chinese Assam tea is a distinct genetic lineage compared to Assam tea from Assam. The study further concluded that China type tea, Chinese Assam type tea and Indian Assam type tea were likely domesticated independently in Southern China, Southwest Yunnan Province of China, and the Assam of India, respectively (Meegahakumbura et. al., 2016). Some tea historians suggested that Assam tea had been introduced from China, but the researchers found that the short breeding history of this tea in Assam made that unlikely. According to them, if the Chinese Assam and Indian Assam teas were from the same origin, they should have been genetically much more similar (Mudur, 2016).

**Summary and Conclusion**

There is still plenty of scope for detailed research on wild teas in Assam, its neighbouring North East Indian states and in the bordering countries extending up to south of China. The recent genetical study using markers has further strengthened the necessity of exploration and germplasm collection of wild Assam teas whatever may be surviving. New discoveries are vividly possible on discovering wild tea germplasm which may provide the scientists valuable source in research for better variety of teas with regard to quality, productivity and resistance to various problems of pests and diseases, stress conditions, etc. besides having historical importance.

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**References**

Baidlon S., 1877, Tea in Assam. Quoted in Science and Practice in Tea Culture, Dr D. N. Barua, 1989


Bendall Derek S., 2011, A historical view of tea. Concource, souvenir of World Tea Science Congress, Tocklai Experimental Station, Tea Research Association, Jorhat, pp: 3-23


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PMid:6057749
https://doi.org/10.1038/165297a0
https://doi.org/10.1371/journal.pone.0155369
Mudur G. S., 2016, China & Northeast beat Britons to brew, The Telegraph, 01.06.2016, pp: 1
Singh I. D., 2015, Characterization of cultivated and wild teas in Northeast India, Two and A Bud, 62(2): 10-13