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NEW DISTRIBUTION RECORDS ON THE OCCURRENCE OF THE DELAVAY SUMMERSWEET *CLETHRA DELAVAYI* FRANCHERT (CLETHRACEAE), A CHINESE SPECIES IN ARUNACHAL PRADESH, INDIA

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The family Clethraceae is composed of two genera, Purdiea with four species in Neotropics (Anderberg & Zhang 2002) and Clethra L. with ca. 68 species (Willis, Dict. Fl. Pl & Ferns 261. 1973, revised by Airy-Shaw 1973; Wu et al. 2005) and distributed in continents Asia, America and Madeira, the archipelago. In Asia, concentration is in China with ca. 15 species (Hu 1960). A few species are found in Malaysia (van Steenis 1958; Backer & van den Brink 1965).

Species description: *Clethra delavayi* Franchert (earlier treated as *Clethra monostachya* Rehder & Wilson) is a shrub of 2–4 m in height with long terminal solitary racemes; distinguished by its elliptic leaves attenuate at ends, smaller flowers, papillose petals, pubescent filaments and styles. Sepals persistent, broadly ovate, papillose outside, and caducous. Stamens 10 in two whorls of 5; filaments shorter than petals, anthers dorsifixed, 2-lobed, v-shaped. Ovary superior; style short at anthesis; stigmas 3 (Rehder & Wilson 1913; Hu 1960) (Images 1a,b).

In India, *Clethra delavayi* Franchert was first reported from Eaglenest Sanctuary, Kameng District, Arunachal Pradesh by Bennet & Naithani in 1978. They identified the species as *C. monostachya* Rehder & Wilson, a Chinese species which is distributed in the mountains of Yunnan-Szechuan-Sikang borders of China, occurring on the margins of woods and thickets at altitudes of

1700–2800 m. The specific habitats were reported earlier, i.e., mixed or coniferous forest margins, open thickets, slopes to alpine regions of Chongqing, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, southeastern Xizang, Yunnan and Zhejiang, Bhutan, northeastern India, northern Myanmar and Vietnam (Shu 2005). The eastern Szechuan and western Yunnan are the western and northern limits of the range of the genus in China (Bennet & Naithani 1978). Interestingly, this was the first and the only report on the presence and distribution of the species in India.

After 34 years, the authors came across the blooming of *C. delavayi* from two new localities in Arunachal Pradesh apart from Eaglenest, the earlier known distribution. The survey was carried out from March to August in Arunachal Pradesh, the eastern most



DATA DEFICIENT	LEAST CONCERN	NEAR THREATENED	VULNERABLE	ENDANGERED	CRITICALLY ENDANGERED	EXTINCT IN THE WILD	EXTINCT
DD	LC	NT	VU	EN	CR	EW	EX

Clethra delavayi
Delavay Summersweet



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Image 1. *Clethra delavayi* Franchert at Eaglenest Wildlife Sanctuary, Arunachal Pradesh
a - Habit; b - Inflorescence (July 2012)

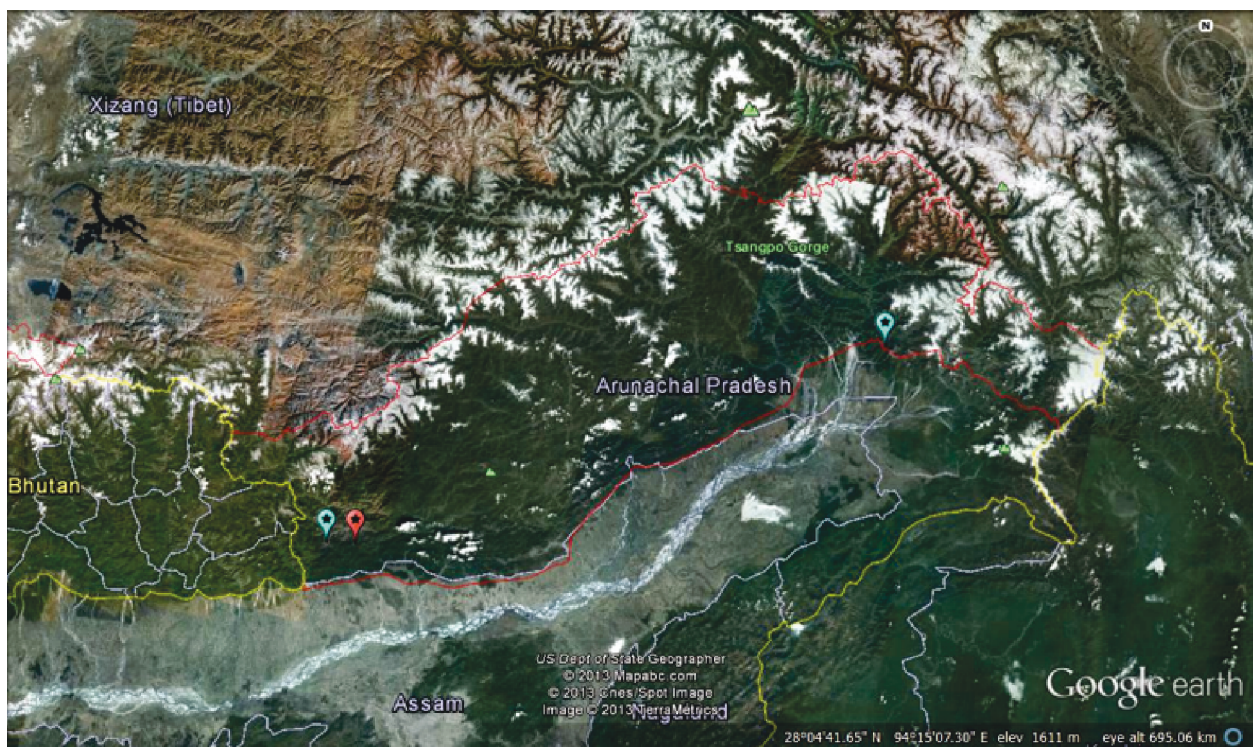


Image 2. The distribution (blue markings indicate new records) of *Clethra delavayi* in Arunachal Pradesh

Table 1. Passport information of *Clethra delavayi* in two districts of Arunachal Pradesh

Distribution	GPS location	Altitude	Flowering period/ season	Forest type
Eaglenest Wildlife Sanctuary, West Kameng	27°07'54.6"N & 92°27'01.6"E	2714m	July (wet season)	Eastern Himalayan moist temperate (broadleaved) forest
Shergaon Road, West Kameng	27°07'50.1"N & 92°15'38.8"E	1988m	July (wet season)	Eastern Himalayan moist temperate (broadleaved) forest
Mayudia Pass, Dibang Valley	28°14'45.1"N & 95°54'46.8"E	2546m	August (wet season)	Eastern Himalayan moist temperate (broadleaved) forest

state of India. Nested quadrats were used to quantify the vegetation diversity. Besides Eaglenest Wildlife Sanctuary, Shergaon in West Kameng District and Mayudia pass in Dibang Valley District were recorded with the species presence (Image 2). The eastern Himalayan moist temperate broadleaved forest (1800–2800 m) is the belt where the species occurrence is associated with in the region (Table 1). Morphologically the population varies in all three locations, i.e., leaf shape, serration and floral characteristics. There are seemingly no other threats to the population at present but distinctive patchiness.

Detailed surveys to understand the distribution of the species in Arunachal Himalaya is emphasized.

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