

RECOLLECTION OF *CRAIBIODENDRON HENRYI* W.W. SMITH
(ERICACEAE: VACCINIOIDEAE), A POTENTIAL ETHNOMEDICINAL PLANT
FROM ARUNACHAL PRADESH AFTER SEVEN DECADES¹

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Introduction

Craibiodendron henryi W.W. Sm. was first described by William Wright Smith (1912) based on collections by Augustine Henry from Szemao forest in China. Surprisingly, in the same year and in the same journal, Smith (1912) first described *C. mannii* based on incomplete collections by Gustav Mann from Meghalaya in India, which were actually an Indian population of *C. henryi* W.W. Sm. The taxon *Craibiodendron mannii* was an imperfectly known species



Fig. 1: Immature flowering twig of *Craibiodendron henryi* collected from Pange Forest in May, 2010 (A.A. Mao 23282)



Fig. 2: Fruiting twig of *Craibiodendron henryi* at Pange forest in November 2014 (S. Panda 132)

to Smith, as the specimen had only immature flower buds and leaves. The German botanist Gustav Mann, who was a gardener at the Royal Botanic Gardens, Kew, collected specimens of *C. henryi* (syn. *C. mannii*) from Juudmaka Pahar near Jowai, in the present Jaintia Hills district of Meghalaya in August, 1891. Subsequently, this species was collected by F. Kingdon-Ward from Dalai Valley ('Delei valley') of Arunachal Pradesh in 1928; by N.L. Bor from Naga Hills in Nagaland during 1935–1936; by A.A. Mao from Lower Subansiri district, Arunachal Pradesh, in 2010 (flower buds); and by S. Panda from Lower Subansiri district, Arunachal Pradesh in 2014 and 2019 (fruiting specimens). Therefore, the specimens collected by Mao and Panda from Arunachal Pradesh are considered as recollection after Mann in 1891 from Meghalaya, Kingdon-Ward in 1928 from Arunachal Pradesh, and Bor in 1936 from Nagaland.

Judd (1986) revised the genus *Craibiodendron* W.W. Sm. and included a single species, *C. henryi* (syn. *C. mannii*) from India. He mentioned that the 'amplified description of *C. mannii*' by Rao and Chakraborty (1982) is clearly conspecific to *C. henryi* in respect of the long acuminate leaves and deeply lobed campanulate corolla.

Panda and Sanjappa (2014) revised the genus in the Indian context and mentioned only one species, *C. henryi* (syn. *C. mannii*). Although Deb (1961) reported *C. stellatum* (Pierre) W.W. Sm. from Shugnu in Manipur, India (Deb 2633), the specimen is untraceable in CAL and ASSAM.

Recently, Mir *et al.* (2019) in their 'Checklist of Endemic Flora of Meghalaya' included *C. henryi* W.W. Sm. based on earlier collections by Mann and King's collector from Meghalaya in 1891. Rao and Chakraborty (1982) in their amplified description of *C. mannii* W.W. Sm. (synonym of *C. henryi*), mentioned that 'there is no recent collection of this plant so far [in the] herbarium consulted'.

Taxonomy: *Craibiodendron henryi* W.W. Sm., Notes Roy. Bot. Gard. Edinburgh 5: 158. 1912; Judd, J. Arnold Arbor. 67: 459. 1986; F. Ruizheng & P.F. Stevens in Wu *et al.*, Fl. China 14: 460. 2005; Panda & Sanjappa in Sanjappa & Sastry, Fasc. Fl. India 25: 228. 2014. Type: China, Yunnan, Szemao forest, 6000 ft, *A. Henry* 13137 (lecto. E, *n.v.*; isolecto. K, image!).

C. mannii W.W. Sm., Notes Roy. Bot. Gard. Edinburgh 5: 159. 1912; T.A. Rao & S. Chakraborty, J. Bombay Nat. Hist. Soc. 79: 223. 1982; Judd, J. Arnold Arbor. 67: 459. 1986; Panda & Sanjappa in Sanjappa & Sastry, Fasc. Fl. India 25: 228. 2014.

Type: INDIA: Meghalaya, Jaintia Hill district, Juudmaka Pahar near Jowai, 1,828.8 m, August 1891, *G. Mann s.n.* (CAL!). Figs 1 and 2.

Vernacular Name: *Patohamang* (Apatanese of Manipolyang).

Description: Erect, robust treelet to medium-sized tree, up to 15 m tall (usually 5–10 m). Stems profusely branched, glabrous; twigs beset with minute deciduous hairs (seen in live specimens). Leaves alternate to subalternate, coriaceous; lamina lanceolate, oblong-lanceolate to elliptic, 6.5–12 x 2–3.7 cm, entire, slightly revolute at margin, cuneate at base, long acuminate to caudate-acuminate at apex, acumen up to 14 mm long, glabrous; venation brochidodromous with 8–12 pairs of secondary veins, obscure above, conspicuous beneath; petioles stout, 7–12 mm long, pubescent beneath. Inflorescence usually axillary, rarely terminal, panicle-like cymes, perulate; primary rachis 10–24 cm long, 14–45-flowered (*A.A. Mao* 23282, ARUN), sparsely pubescent, producing secondary and tertiary branches. Immature flower buds 4–5 mm long, greenish-white; pedicels 2–3 mm long, puberulous. Bract 1, basal, ovate-triangular, 1.5–2 mm long, caducous. Bracteoles 2, subbasal on pedicel, *c.* 1.5 mm long, caducous. Calyx lobes

5, basally connate, persistent in immature fruits, broadly ovate-triangular, *c.* 1.5 x 2 mm, puberulous inside, glabrous outside. Immature corolla greenish-white (*A.A. Mao* 23282, ARUN) globose-campanulate in bud, 2–4 mm long, glabrous. Stamens immature, 10, *c.* 1.5 mm long; filaments *c.* 1 mm long, slender, geniculate, basally dilated, anther-filament junction spurless; anther lobes minute. Ovary ovoid-globose, *c.* 1 x 1 mm, glabrous; style *c.* 1 mm long; stigma truncate. Fruits (*S. Panda* 132 & 516 DGC & MAC) loculicidal 5-valved capsule with persistent style and withered calyx, ovoid to globose-ovoid, 9–14 x 9–16 mm, fruiting pedicel sparsely pubescent, *c.* 9 mm long. Seeds obconical, ovoid, winged, *c.* 5 x 4 mm, scariose.

Distribution: INDIA: Arunachal Pradesh, Meghalaya and Nagaland. EXTRALIMITAL: China (Yunnan); northern Myanmar (Htawpaw); northern Thailand (Chiang Mai).

Habitat: Along rocky slopes in discontinuous patches in association with *Lyonia ovalifolia* and *Rhododendron* spp. at *c.* 1,600–2,000 m altitude.

Flowering: June to August (peak in July). **Fruiting:** Late September to late December (peak in mid-October to mid-November).

Specimens examined: **Arunachal Pradesh:** Lower Subansiri district, Forest in vicinity of Pange Inspection Bungalow 27° 32.896' N & 93° 53.790' E, 1,800 m, 31.v.2010, *A.A. Mao* 23282 (fl. buds: ARUN-Arunachal Pradesh Regional Centre Herbarium, Itanagar, Botanical Survey of India); Lower Subansiri district, Forest in vicinity of Pange Inspection Bungalow 27° 32.896' N & 93° 53.790' E, 1,800 m, 17.xi.2014, *S. Panda* 132 (fr: Darjeeling Govt College Herbarium-DGC & Maulana Azad College Herbarium-MAC); 1 km from Pange toward Talle Valley, 27° 32.565' N & 93° 53.395' E, 1,874 m, 12.xii.2019, *S. Panda* 516 (MAC); 1 km from Pange toward Manipolyang, 27° 32.155' N & 93° 53.195' E, 12.xii.2019, 1,846 m, *S. Panda* 524 (MAC); Dalai Valley ('Delei valley'), 1928, *F. Kingdon-Ward* 7974 (K, Cibachrome image!). Meghalaya: Juudmaka Pahar, Jowai, Jaintia Hill district, 1891, *G. Mann s.n.*; Jowai, 1891, *King's Collector* [*G. Mann s.n.*, acc. no. 38805 (ASSAM)]. Nagaland: Naga Hills, Kekrima, 1935, *N.L. Bor* 2828 (DD); Naga Hills, Pedi, May, 1936, *N.L. Bor* 6271 (ASSAM).

Ethnomedicinal uses: Extract of tender leaves is used to cure old wounds, skin rashes, and to clear skin spots, by the Apatanese of Manipolyang, Soro, and Hapoli. Extract of

seeds is boiled with coconut oil, allowed to cool and applied on the skin to remove skin spots.

IUCN Status: According to the IUCN Red List of Threatened Species (version 14, 2019), the species is not assessed as yet, but all three populations of *C. henryi* W.W. Sm. of Lower Subansiri, Arunachal Pradesh, are well protected under Talle Wildlife Sanctuary. Although these populations are restricted to three sites within an area of 2 sq. km, fortunately they are not reduced yet, as observed in December, 2019 by the first author, nearly 5 years after the last visit (November, 2014). The three sites are: Site I – Four trees and two shrubs near Pange Inspection Bungalow c. 10 sq. m; Site II – Two trees and two shrubs at intervals

of c. 1 km towards Pange-Talle Valley trek route, c. 5 sq. m; Site III – Two trees just 1 km before Pange from Manipolyang, in an area c. 4 sq. m.

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REFERENCES

- DEB, D.B. (1961): Dicotyledonous plants of Manipur Territory. *Bull. Bot. Surv. India* 3(3): 293.
- IUCN (2019): Red List Categories and Criteria, Version 14, 2019. ([http://www.iucnredlist.org/documents/RedList Guidelines.pdf](http://www.iucnredlist.org/documents/RedList%20Guidelines.pdf)). Accessed on June 30, 2020.
- JUDD, W.S. (1986): A Taxonomic Revision of *Craibiodendron* (Ericaceae). *J. Arnold Arbor.* 67: 459–462.
- MIR, A.H., K. UPADHAYA, D.K. ROY, C. DEORI & B. SINGH (2019): A comprehensive checklist of endemic flora of Meghalaya, India. *Journal of Threatened Taxa* 11(12): 14543.
- PANDA, S. & M. SANJAPPA (2014): *Craibiodendron henryi* W.W. Sm. pp. 228–229. In: Sanjappa, M. & A.R.K. Sastry (Eds): Fascicles of Flora of India: Fascicle 25 Ericaceae. Botanical Survey of India, Kolkata.
- RAO, T.A. & S. CHAKRABORTY (1982): An amplified description of a hitherto uncommon species *Craibiodendron mannii* W.W. Sm. (Ericaceae). *J. Bombay Nat. Hist. Soc.* 79(1): 223–225.
- SMITH, W.W. (1912): New species of *Craibiodendron*. *Notes Roy. Bot. Gard. Edinburgh* 5: 157–160.

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