

## Two New Synonyms in Indian *Cryptocarya* (Lauraceae)

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### भारतीय क्रिप्टोकैरिया (लॉरेसी) में दो नये समानार्थ (सिनोनिम्स)

आनन्द कुमार, गोपाल कृष्ण एवं तापस चक्रवर्ती

#### सारांश

प्रस्तुत शोध पत्र में क्रिप्टोकैरिया बुरकेलाई एम. गंगोप. को सी. फेरिया ब्लूम के समानार्थ कर संकुचित किया गया है और इसे भारत के लिये नये अभिलेख के रूप में दर्ज किया गया है। इसी प्रकार सी. शेकेलमुदियाना ए.के.एच. बचन एवं पी.के. फासिला को भी सी. लाओसोनिया गैम्बल में समानार्थ किया गया है।

#### ABSTRACT

*Cryptocarya burkillii* M. Gangop. is reduced here as a synonym of *C. ferrea* Blume and it makes a new record to India. Similarly, *C. sheikelmudiyana* A.K.H. Bachan & P.K. Fasila is also synonymized under *C. lawsonii* Gamble.

**Keywords:** *Cryptocarya burkillii*, *Cryptocarya sheikelmudiyana*, syn. nov.

#### INTRODUCTION

The genus *Cryptocarya* R.Br. comprises 200–250 species ranging from South China and India, through Malesia to North Australia, Madagascar and South America (De Kok 2016). Gangopadhyay & Chakrabarty (2005) in their regional revision of *Cryptocarya* in Indian subcontinent recognized the occurrence of 13 species in India. Later, Gangopadhyay (2006, 2008) described four more species from Northeast India while Fasila & al. (2020) discovered one more species from peninsular India. De Kok (2015) included “India (Andaman Islands)” while citing the distribution of the South Asian and Malesian species *C. diversifolia* Blume on the basis of two collections available at K (pers. comm.). Thus, as of now, the total number of Indian species stands to 19.

While preparing a revised treatment of the genus *Cryptocarya* for the “Flora of India Project” currently under preparation in Botanical Survey of India, the authors found that the species *C. burkillii* M. Gangop.

(Gangopadhyay 2006), described on the basis of a single fruiting material from Arunachal Pradesh, India matches very well with the characters of *C. ferrea* Blume (Blume 1826; Table 1). As per the circumscription of De Kok (2016), *C. ferrea* is a variable species, distributed in Vietnam, Cambodia, Laos, Thailand, Malaysia, Singapore, Philippines and Indonesia, exhibiting variation particularly in the characters of the leaves and fruits. The tomentellous parts (branchlets, petioles and midrib on the undersurface of the leaves), oblong to elliptic coriaceous leaves, the sunken petioles and midrib on the upper surface of the leaves and the ellipsoid fruits (c. 3 × 2 cm) of *C. burkillii* point to its inclusion within the range of variation of *C. ferrea*. The only noticeable difference is the faintly ridged fruits of *C. burkillii* as compared to the smooth to obscurely ridged fruits of *C. ferrea* which may be individual variation or may require a varietal rank on this character when further gatherings are made available. Hence, the two species are merged herein.

**Table 1.** Comparison between *C. burkillii* and *C. ferrea*

Character	<i>C. burkillii</i>	<i>C. ferrea</i>
Habit	Stature unknown	Trees, 10–20 m high
Branchlets	Tomentellous towards apices	Velutinous when young, subglabrous when mature
Leaves	Oblong, obovate-oblong to broadly elliptic, 14–19 × 5–9 cm, acute to rounded or sometimes unequal at base, apiculate at apex, coriaceous, puberulous on midrib above and on midrib and lateral nerves beneath; midrib channelled above, raised beneath; lateral nerves 8–10 pairs, sunken above; tertiary nerves faint above, prominent beneath, scalariform; petioles 1–1.5 cm long, channelled above, tomentellous to puberulous	Oblong to elliptic or lanceolate, 10–20 × 3–9 cm, acute to rounded or sometimes unequal at base, blunt or shortly acuminate at apex, coriaceous, pubescent on major nerves above and beneath; midrib sunken above, raised beneath; lateral nerves 5–12 pairs, sunken above, prominent beneath; tertiary nerves faint to prominent, scalariform; petioles 1–2 cm long, channelled above, appressed velutinous to scattered puberulous
Inflorescences	Axillary and terminal, 10–20 cm long and subglabrous in fruiting	Axillary and terminal, 5–20 cm long, tomentellous in flowering, subglabrous in fruiting; bracteoles under 1 cm long, deciduous
Flowers	Not seen	Perianth tube 1–1.5 mm long, velutinous outside; sepals elliptic, 1.5–2.5 mm long, puberulous; stamens c. 1.5 mm long; ovary ovoid, c. 0.5 mm long; style c. 1 mm long; stigma simple
Fruits	Ellipsoid, 2.5–3 × 1.5–2 cm, glabrous, faintly ridged; stalk short, thickened	Ovoid to ellipsoid or sometimes obovoid, 1.5–3 × 1–1.5 cm, glabrous, smooth or obscurely ridged; stalk thickened

*Cryptocarya sheikelmudiyana* A.K.H. Bachan & P.K. Fasila in Fasila & al. (2020), described from Kerala, India was differentiated from *C. stocksii* Meisn. (Meissner 1864) and *C. lawsonii* Gamble (Gamble 1925) “in being a large buttressed tree 25–35 m high, with the elliptic to oblong leaves with acute to apiculate apex, veins strictly limited to 7–8 pairs, tepals fulvous tomentose abaxially, non-lenticellate, longitudinally shallowly-ridged oblong fruits with a constriction just below the middle.” It may be mentioned that *C. stocksii* can be differentiated from *C. lawsonii* as well as *C. sheikelmudiyana* by the much

smaller (10–13 × 8–10 mm) ovoid to ovoid-ellipsoid fruits but the latter two are indistinguishable (Table 2). The fruits in *C. sheikelmudiyana* are slightly smaller than those of *C. lawsonii* which appear to be the range of variation of the latter. The only appreciable difference noticed are the abruptly constricted fruits of the former slightly below the middle but this difference also does not hold good because the specimens of *C. lawsonii* also show this variation. Hence the new species, *C. sheikelmudiyana* is combined herein with *C. lawsonii*.

**Table 2.** Comparison between *C. lawsonii* and *C. sheikelmudiyana*

Character	<i>C. lawsonii</i>	<i>C. sheikelmudiyana</i>
Habit	Trees, 15–20 m high	Trees, 25–35 m high
Branchlets	Initially fulvous, ochraceous to brown appressed-tomentose, finally glabrous	Puberulous when young, glabrous later on

Leaves	Oblong to oblong-lanceolate or ovate-oblong, narrowly ovate, ovate-elliptic to ovate-lanceolate, 6–16 × 2.5–7 cm, acute or rounded or sometimes unequal at base, apiculate to acuminate at apex, thinly to stiffly coriaceous, glabrous and often glossy above, sparsely appressed yellow-pilose or puberulous to glabrous and glaucous beneath; midrib slightly impressed above, raised beneath; lateral nerves 5–12 pairs, slender, flat or slightly sunken and inconspicuous above, prominent beneath; tertiary nerves obscure above, faint or occasionally prominent beneath, scalariform to percurrent; nervules faint beneath; petioles 1–2 cm long, 1–3 mm thick, channelled above, yellow to brown appressed tomentose, subglabrous in age.	Elliptic to elliptic-oblong, rarely ovate-oblong, 8–20 × 3–9 cm, acute to obtuse or unequal at base, acute, apiculate to acuminate at apex, thinly coriaceous, glabrous, glaucous beneath; midrib impressed above, raised beneath; lateral nerves 7–8 pairs, faint above, prominent beneath; tertiary nerves prominent beneath, scalariform; petioles 1–1.5 cm long, channelled above, glabrous.
Inflorescences	Axillary and terminal, 4–14 cm long, dense-flowered; peduncles 1–4 cm long; branches spreading, yellow to brown appressed-tomentose	Axillary and terminal, 3.5–9.5 cm long, dense-flowered; peduncles 0.5–2 cm long; branches brown-puberulous
Flowers	c. 3.2 × 2.2 mm; pedicels c. 0.5 mm long; calyx tube c. 1 × 1.2 mm, tomentose outside; sepals ovate, 1.5–2 × 1–1.2 mm, acute, scattered puberulous outside; stamens 1–1.4 mm long; filaments 0.3–0.5 mm long; anthers ovoid to ellipsoid, 0.6–0.8 × 0.4–0.6 mm, acute; glands ovoid, c. 0.3 mm long; staminodes c. 1 mm long, villous at base; ovary ellipsoid-oblong, c. 1.3 mm long; style c. 1.2 mm long, stigma peltate	c. 4 × 2.5 mm; pedicels 1–2.5 mm long; calyx tube c. 2 × 1.8 mm, fulvous-tomentose outside; sepals obovate-oblong, c. 2 × 1.2 mm, obtuse, fulvous-tomentellous outside; stamens 1.3–1.8 mm long; filaments 0.4–1 mm long; anthers c. 0.8 mm long; glands ovoid, c. 0.6 × 0.4 mm; staminodes c. 1 mm long, villous; ovary ellipsoid-oblong, c. 1.2 mm long; style c. 1.2 mm long; stigma subcapitate
Fruits	Ovoid to oblong, 2.5–3.5 × 1.5–2 cm, rounded at both ends, sometimes abruptly constricted slightly above the base (in the same specimen), smooth when ripe, longitudinally striate or shallowly ribbed and reddish-brown when dry, glabrous; fruiting pedicels (stalk) up to 3 mm long	Oblong, 2–2.5 × c. 1 cm, rounded at both ends, abruptly constricted just below the middle, smooth when ripe, longitudinally striate or shallowly ribbed and black when dry, glabrous; fruiting pedicels (stalk) c. 0.5 mm long

## TAXONOMY

**Cryptocarya ferrea** Blume, Bijdr. Fl. Ned. Ind. 557. 1826.

Type: INDONESIA, Java, Cheribon Province, Mt. Tjerimai, *Blume s.n.* (L0036127 image! lectotype designated by De Kok 2015: 326); isolectotypes (BO: *n.v.*, L0036128 image!).

= *Cryptocarya burkillii* M. Gangop. in Bull. Bot. Surv. India 48: 120. 2006, *syn. nov.*

Type: INDIA. Arunachal Pradesh, Abor hills, Rengging, 21.02.1912, *Burkill* 36668 (holo: CAL0000021301!; iso: CAL0000021302!). **Fig. 1.**

Note: This is a new record for India.

**Cryptocarya lawsonii** Gamble in Bull. Misc. Inform. Kew 1925: 127. 1925.

Type: INDIA, Tamil Nadu, Nilgiri District, Sispara, 00.04.1884, *Lawson s.n.* (K000768412 image! lectotype designated by Chakrabarty & Kumar 2018: 136). Residual syntypes: INDIA, Tamil Nadu, Nilgiri District, Sispara, 00.05.1884, *Gamble* 14263 (K000768411, K000768413 images!); Sispara, 00.06.1884, *Gamble* 14470 (K000768414 image!); Avalanchi, 00.05.1889, *Gamble* 20593 (K000768415 image!). Coimbatore District, Anamallay, 1873, *Beddome s.n.* (CAL0000021308!, CAL0000021374!). Tirunelveli District, Tinnevely Ghats, *Beddome* 190 (K *n.v.*).

= *Cryptocarya sheikelmudiyana* A.K.H. Bachan & P.K. Fasila in Taiwaniana 65(3): 266. 2020, *syn. nov.*

Type: INDIA, Kerala, Thrissur District, way to Pooppara, Parambikulam Tiger Reserve, Sheikelmudi, 10°20'52" N, 76°49'33" E, c. 1100 m, 23.09.2018, *Bachan & Fasila* 150502 (holo: CAL, not deposited; iso: CALI, KFRI, *n.v.*).

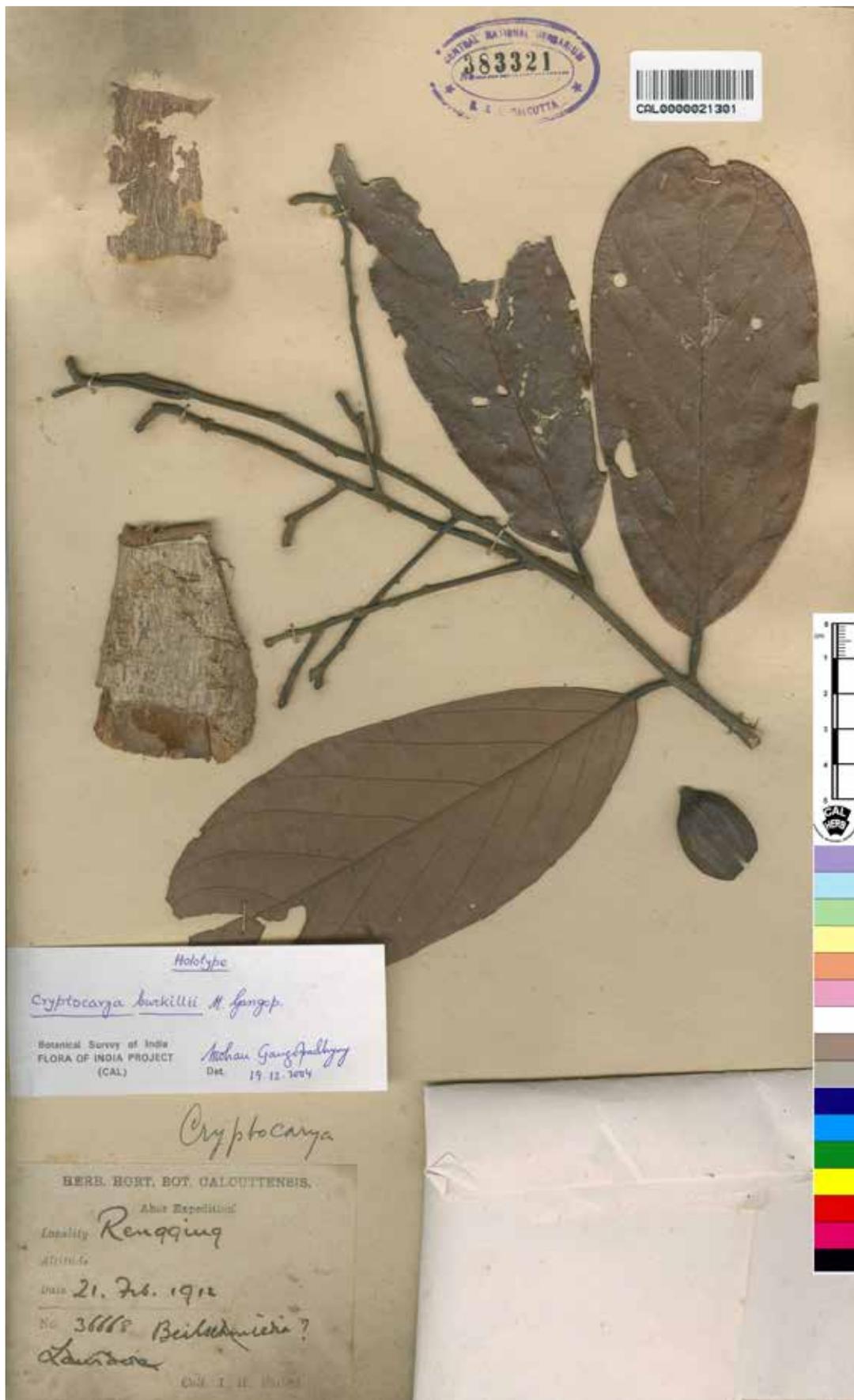


Fig. 1: Holotype of *Cryptocarya burkillii* M. Gangop. (CAL0000021301) © Director, Botanical Survey of India, Kolkata.

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