Cryptocarya cercophylla W.E.Cooper (Lauraceae), a new species from Queensland's Wet Tropics

W.E. Cooper

Summary

Cooper, W.E. (2013). *Cryptocarya cercophylla* W.E.Cooper (Lauraceae), a new species from Queensland's Wet Tropics. ***Austrobaileya* 9(1): 75–79.** *Cryptocarya cercophylla* W.E.Cooper is described and illustrated. Notes on habitat, habit and distribution are provided. The new species is restricted to a small area near Boonjee in the Wet Tropics of north-eastern Queensland.

Key Words: Lauraceae, *Cryptocarya*, *Cryptocarya cercophylla*, rainforest, Australia flora, Queensland flora, Wet Tropics bioregion, new species

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Introduction

Cryptocarya R.Br. (Lauraceae) is a pantropical genus of 200–250 species of small to large trees, distributed from Africa, Asia, Malesia, Australia, the Pacific and South America (Le Cussan & Hyland 2007). In Australia, 48 species are now recorded, 39 or 40 are endemic and 36 of those occur in the rainforests of tropical Queensland.

Many *Cryptocarya* species are very restricted in distribution. Most species in Australia occur in various forms of rainforest, ranging from wet evergreen rainforest to gallery forest and other more seasonal rainforests, with a few also occurring in wet sclerophyll forest. They occur in a variety of substrates from sea level to 1600 m.

In February 1981, Laurence Jessup with J. Geoff Tracey and Tony Irvine collected the first specimens (*Jessup 319, Tracey & Irvine* and *Tracey 14993*) of the species described below as *Cryptocarya cercophylla* W.E. Cooper within the Boonjee Logging Area in the Russell River headwaters (now part of Wooroonooran National Park). The plant was originally thought to be a species of Icacinaceae. Flowering specimens were subsequently collected by Jessup, Gordon Guymer and Bill McDonald in October 1988, Bernie Hyland in July 1990, Bob Jago in August 1994 and Rigel Jensen in November 1994. By this time the plant was recognised as a species of *Cryptocarya*. Visiting Nigerian researcher, Olusegan Osunkoya with direction from Jensen, collected the first specimen with one fruit, in February 1994. Hyland *et al.* (2003) listed this entity under the phrase name *Cryptocarya* sp. (Boonjee BH 25794RFK), whereas the Queensland Herbarium listed it as *Cryptocarya* sp. (Boonjie L.W.Jessup+ 319) (Jessup 2007). However, it was not treated in either Hyland (1989) or the *Flora of Australia* (Le Cussan & Hyland 2007). With advice from Andrew Ford, a tree was located in January 2013 with enough fruiting material to enable a complete description of this species as *Cryptocarya cercophylla* W.E.Cooper.

Materials and methods

The study is based upon the examination of herbarium material from CNS together with relevant field observations. All specimens cited have been seen by the author.

Measurements of the floral parts and fruits are based on material preserved in 70% ethanol and fresh specimens in the field. Abbreviations in the specimen citations are: LA (Logging Area), NP (National Park), SFR (State Forest Reserve) and TR (Timber Reserve).

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Taxonomy

Cryptocarya cercophylla W.E.Cooper **sp. nov**. Similar to *Cryptocarya meissneriana* Frodin but differs in the leaf apex (distinctly caudate, with acumen 8–20 mm long and 1–2 mm wide, versus shortly acuminate or caudate with acumen up to 10 mm long and 2–4 mm wide), lateral veins (3–6 versus 7–10), tepals (erect and not opening widely versus opening widely at anthesis), and anther apex (acute versus truncate). **Typus:** Australia: Queensland. Cook District: Timber Reserve 1230, Bartle Frere, Boonjee Logging Area [east of Malanda], 17 November 1994, *R. Jensen 72* (holo: CNS [2 sheets + spirit], iso: BRI, CANB, MO *distribuendi*).

Cryptocarya sp. (Boonjee BH 25794RFK); Hyland *et al.* (2003).

Cryptocarya sp. (Boonjee); Cooper & Cooper (2004: 144).

Cryptocarya sp. (Boonjie L.W.Jessup+ 319); Jessup (2007: 92, 2010: 97).

Cryptocarya sp. Boonjee (B.Hyland 25794RFK); Hyland *et al.* (2010).

***Illustrations*:** Hyland *et al.* (2003), as *Cryptocarya* sp. (Boonjee BH 25794RFK); Cooper & Cooper (2004: 144) as *Cryptocarya* sp. (Boonjee). Hyland *et al.* (2010), as *Cryptocarya* sp. (Boonjee B.Hyland 25794RFK).

Small tree to 10 m, poorly formed and often with coppice shoots, stems to 12 cm diameter at breast height, not buttressed. Bark pale with sparse vertical elongated lenticels and fine fissures; twigs terete, green. **Leaves** simple, alternate, petiolate, discolorous, glabrous; petioles 7–13 mm long, grooved and yellowish; lamina ovate or elliptical, 53–100 mm long, 22–45 mm wide, thinly leathery, upper side glossy dark green, lower side shiny (less so than the upper surface), paler green, base attenuate or cuneate, apex caudate, acumen 8–20 mm long, 1.3–2 mm wide; margins entire and slightly recurved, mostly sinuous; venation brochidodromous, midrib depressed on upper side; secondary lateral veins indistinct, 3–6 pairs at 45–90° to the primary midrib, oil dots numerous (visible with a lens). **Inflorescences** axillary or rarely terminal, racemose or rarely paniculate, 4–7-flowered, 10–28 mm long, not exceeding leaves, rachis ± glabrous with occasional minute simple hairs; bracts triangular, *c.* 0.5 mm long and 0.2 mm wide, sparsely and minutely hairy, caducous. **Flowers** bisexual, actinomorphic, not fragrant, 3-merous, *c.* 2.5 mm long and 1.75 mm diameter; pedicels 0.6–2 mm long, sparsely and minutely hairy; perianth tube 2.5–2.8 mm long, *c.* 1.5 mm wide at apex, inner surface hairy, outer surface glabrous; tepals 6, in 2 whorls of 3, glabrous outside, sparsely hairy inside, creamy-green or cream, erect at anthesis; outer tepals 1.2–1.7 mm long, 1.2–1.5 mm wide; inner tepals *c.* 1.7 mm long and 1.6 mm wide; stamens with filaments sparsely hairy, *c.* 5 mm long; gland heads conical, glabrous, *c.* 1 mm long and 0.4 mm wide, stalks sparsely hairy or glabrous *c.* 0.2 mm long; anthers 6 introrse and 3 extrorse, 2-locular, inner and outer anthers *c.* 0.5 mm long and 0.5 mm wide, glabrous; staminodes 3, head cordate, sessile, *c.* 0.7 mm long; ovary glabrous to sparsely hairy, 0.8–1 mm long, *c.* 0.5 mm wide; style glabrous, 1.2–1.6 mm long. **Fruit** a nut, appearing as an inferior drupe, elliptical, rarely ovoid or obovoid, mostly asymmetric at base with one side slightly lobed, 16.5–20 mm long, 10–14.5 mm wide, ribbed, glabrous, red to shiny black at maturity, epicarp 0.4–0.6 mm thick, mesocarp + epicarp *c.* 1.8 mm thick, mesocarp green, stigma persistent at apex with diameter *c.* 1.5 mm, pedicel 1–2.8 mm long; seed solitary, 16–19.5 mm long, 8–12.5 mm wide; endocarp beaked at base, cream, ribbed; cotyledons white, uniform in texture (not ruminate), radicle apical. **Figs. 1 & 2.**

***Additional selected specimens (from 25 examined)*: Queensland.** Cook District: Tolga, cultivated, Jan 1995, *Sankowsky 1437* (CNS); Atherton, cultivated, Jul 1990, *Gray 5210* (CNS); Butchers Creek, *c.* 20 km ESE of Yungaburra, Stockwellia site, Jan 1985, *Morawetz, Waha & Weber 114-30185* (CNS); TR 1230 Boonjie LA, Feb 1981, *Jessup 319, Tracey & Irvine* (BRI); Wooroonooran NP, Stockwellia site, July 2000, *Forster PIF25913, Booth & Jensen* (BRI); TR 1230, Bartle Frere, Boonjee LA, July 1990, *Hyland 14052* (CNS), *14053* (CNS), *25793RFK* (CNS), *25794RFK* (CNS), *25795RFK* (CNS); TR 1230, Boonjee LA, the headwaters of the Russell River, Feb 1981, *Tracey 14993* (CNS); Wooroonooran NP, Stockwellia area south of road to Mt Bartle Frere, Site 216, Dec 2009, *Ford 5636 & Cooper* (BRI, CNS);

Stockwellia site, Boonjee, Wooroonooran NP, Jul 2011, *Cooper 2136 & Ford* (CNS), Oct 2012, *Cooper 2165* (CNS); SFR 755, Bartle Frere, Gosschalk LA, Sep 1994, *Gray 5774* (CNS); TR 1230, Boonjee LA, Feb 1994, *Osunkoya 1* (CNS); Wooroonooran NP, along Russell River track between lookout and Chucklunga track, Sep 2012, *Ford 6082* (CNS); Wooroonooran NP, Donkey Track near Zig Zag, Mar 2003, *Forster PIF29259 & Cooper* (BRI); Wooroonooran NP, along Chucklunga track, Jan 2013, *Cooper 2210 & Ford* (CNS); Palmerston Ridge Track, Feb 1995, *Hunter 1154* (BRI).

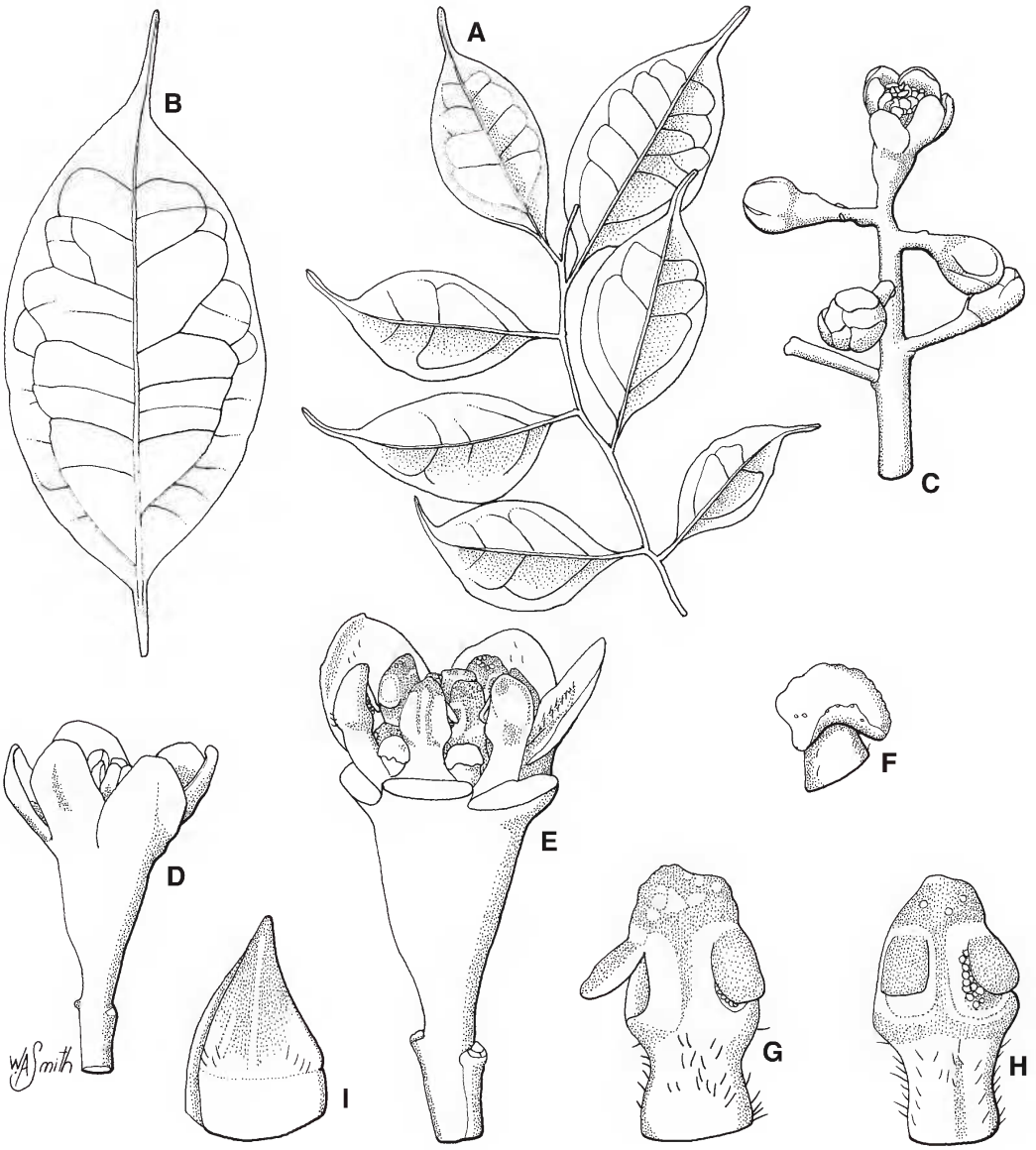

Fig. 1. ***Cryptocarya cercophylla.*** A. stem with leaves showing main lateral veins ×0.5. B. leaf showing primary, secondary and some tertiary venation ×1. C. inflorescence showing open flower, buds and bracts on pedicels ×4. D. flower (side view) ×8. E. flower (side view with 3 tepals removed) ×12. F. staminode ×32. G. anther (inner whorl) ×32. H. anther (outer whorl) ×32. I. gland showing head and stalk ×1. A & B from *Forster PIF29259 & Cooper* (BRI); C–I from *Jensen 72* (CNS). Del. W. Smith.

Fig. 2. ***Cryptocarya cercophylla*** fruiting stem (*Cooper 2210 & Ford* [CNS]). Photo: A. Ford.

***Distribution and habitat*:** *Cryptocarya cercophylla* is endemic to Wooroonooran National Park within the Wet Tropics bioregion of north-eastern Queensland, where it is known to occur in a small area between what is locally referred to as the Stockwellia site at Boonjie and the nearby Russell River, at altitudes 580–680 m. The species may well occur in a broader area of the western Russell River catchment (**Map 1**).

Cryptocarya cercophylla grows as an understory tree in a high rainfall area of notophyll rainforest on clay soils derived from metasediments. Tree species that it co-occurs with are *Stockwellia quadrifida* D.J.Carr, S.G.M.Carr & B.Hyland, *Beilschmiedia oligandra* L.S.Sm., *Ceratopetalum virchowii* F.Muell., *Elaeocarpus johnsonii* F.Muell, *Endiandra dichrophylla* F.Muell., *Flindersia bourjotiana* F.Muell., *Franciscodendron laurifolium* (F.Muell) B.Hyland & Steenis and *Peripentadenia mearsii* (C.T.White) L.S.Sm., *Bobea myrtoides* (F.Muell.) Valeton and *Aceratium doggrellii* C.T.White. It appears to favour areas disturbed by landslips.

***Phenology*:** Flowers have been recorded in July, October, November and December: fruits have been recorded in January and February.

***Notes*:** In cultivation, *Cryptocarya cercophylla* has flowered as a shrub at 1.5 m tall; however, flowering collections in the wild are only known from trees 6 m and above.

Fallen stems produce adventitious roots, which appear to eventually grow into individual trees following decomposition of the fallen stem. Evidence of such a phenomenon can be seen as a number of 'individuals' occurring close together (3–5 m) and in a straight line.

***Affinities*:** *Cryptocarya cercophylla* appears to be most similar to *C. meissneriana* from southeast Queensland and northeast New South Wales but differs from this species in the leaf apex (distinctly caudate, with acumen 8–20 mm long and 1–2 mm wide, versus shortly acuminate or caudate with acumen up to 10 mm long and 2–4 mm wide), leaf venation (3–6 secondary lateral veins versus

7–10 secondary lateral) and the tepals erect and not opening widely at anthesis (versus tepals opening widely at anthesis).

***Conservation status*:** *Cryptocarya cercophylla* is a geographically restricted species and can be classified as **Vulnerable** (Criterion D2) using the criteria of the IUCN (2001).

***Etymology*:** The specific epithet is derived from the Greek, *kerkos* (tail), and *phyllon* (leaf), in reference to the distinctive caudate or tail-like leaf apices.

Acknowledgements

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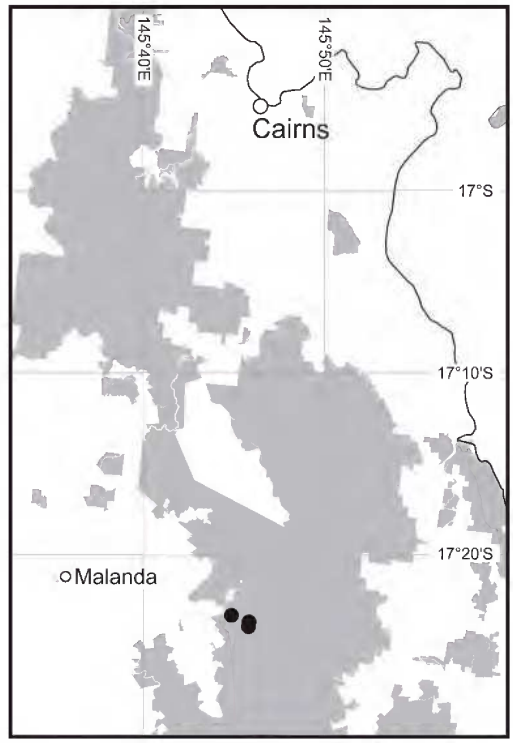

Map 1. Distribution of *Cryptocarya cercophylla* in north-east Queensland. Shaded area on map indicates Wooroonooran National Park.