



Anacolosa australis W.E.Cooper (Aptandraceae), a new species from Cape York Peninsula, Queensland

W.E. Cooper^{1*} and P.A. Lamei²

¹Australian Tropical Herbarium, James Cook University, Cairns Campus, McGregor Road, Smithfield, Queensland 4878, Australia

²Penniel Aquila Lamei, Papua New Guinea Forest Research Institute, P.O. Box 314, Lae 411, Morobe Province, Papua New Guinea

*Corresponding author: Email: wendy@williamtcooper.com.au

Wendy Cooper  <https://orcid.org/0000-0001-8673-8193>



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Abstract

Anacolosa australis W.E.Cooper *sp. nov.* is described as new for Australia, illustrated and distinguished from *Anacolosa papuana* G.Schellenb. Notes on habitat and distribution are provided for the new species.

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Introduction

Anacolosa Blume, formerly placed in the Olacaceae, is the sole Australian representative of the Aptandraceae (otherwise comprising *Aptandra*, *Cathedra*, *Chaunochiton*, *Harmandia*, *Hondurodendron*, *Ongokea* and *Phanerodiscus*) in the Santalales (Malécot & Nickrent 2010). *Anacolosa* is presently regarded as comprising 15 species (Plants of the World Online), occurring in the Democratic Republic of the Congo, Madagascar, India, Myanmar, Thailand, Malaysia, Indonesia, Laos, Cambodia, Philippines, the Pacific (Fiji, Tonga and Samoa) and Australia. Cheek et al. (unpublished) suggest that the two African species (*A. uncifera* and *A. deniseae ined.*) may be transferred to a proposed new genus with significant differences to *Anacolosa*.

Sleumer (1980) and Sleumer (1984), in treating Olacaceae from South East Asia, Malesia and adjacent areas, described *Anacolosa papuana* G.Schellenb. as

occurring in New Guinea and the Solomon Islands. The first *Anacolosa* specimen collected in Australia was *B.Hyland 9472* (CNS), which was collected in 1977 at the Chester River on Cape York Peninsula. The Queensland Herbarium Annual Report 1981–82 (Anonymous 1982) listed *Anacolosa papuana* as a new distribution record for Australia. George (1984) treated *Hyland 9472* as *Anacolosa* *sp.* in his treatment of the Olacaceae for Australia, and noted that the specimen differed from *A. papuana* and that further research was needed to determine its taxonomic affinity.

Examination of additional, fertile collections of Australian *Anacolosa* confirm that this material represents an undescribed taxon, here published as *Anacolosa australis* W.E.Cooper *sp. nov.*

Methods

We examined herbarium material from the Australian Tropical Herbarium (CNS) and Forest Research Institute,

Lae Botanic Gardens (LAE) and made field observations in Australia. Images of the type specimen of *A. papuana* and vouchers of both *A. australis* and *A. papuana* held at BRI, K and L have also been examined and are indicated as *i.d.v.* (*imago digitalis visa*).

Measurements of the floral parts and fruits are based on freshly collected specimens and material preserved in 70% ethanol.

Taxonomy

Anacolosa australis W.E.Cooper

Type: Australia: Queensland. Cook District: Wattle Hills, 11 November 2021, *W. Cooper 2931, R. Jensen & F. Zich* (holo: CNS 154125 [2 sheets + spirit], iso: BRI, CANB, K, L, LAE, MO, NSW, SING).

Anacolosa sp. George (1984).

Anacolosa papuana Qld Herbarium 1981–82; Cooper & Cooper (2004:376); CHAH (2006); Zich *et al.* (2020).

Anacolosa sp. 1 (Chester River) Briggs & Leigh (1988).

Anacolosa sp. Chester River (B.Hyland 9472) Thomas & McDonald (1987) & (1989).

Illustrations: Cooper & Cooper (2004) as *Anacolosa papuana*; Zich *et al.* (2020) as *Anacolosa papuana*.

Diagnosis. *Anacolosa australis* is similar to *Anacolosa papuana*, differing in the inflorescence being a glomerule (v. fascicle); flowers sessile or nearly so on peduncles up to 0.3 mm long (v. peduncles 1–4 mm long); flowers c. 5 mm long and 2.5 mm wide (v. c. 2.5 mm long and 1.25 mm wide); calyx cupular (v. salver-shaped); filament length 1–2 mm (v. 0.3 mm); anther length 0.8–1 mm (v. 0.5); ovary sessile (v. peduncle c. 0.25 mm long); fruiting peduncle length c. 1.5 mm (v. 2–7 mm); ovary hemispherical (v. ovoid); fruit obovoid, 32–46 mm long, diameter 30–36 mm (v. globose or slightly obovoid, 12–22 mm long, diameter 9.5–20 mm); fruit apex furfuraceous in a broad \pm circular patch spreading out from the disk rim with a diameter 10–12.5 mm (v. glabrous or rarely a narrow furfuraceous circle up to 5 mm diameter); disk rim diameter c. 1.5 mm and distinctly recessed by 3–4 mm with the stigma well below the rim (v. diameter 1.5–4 mm and \pm flush with fruit surface with the stigma protruding beyond fruit apex for up to c. 0.5 mm).

Small tree to 7 m, monoecious; buttresses absent; bark grey-brown with numerous lenticels mostly in vertical lines with older stems becoming tessellated; twigs zig-zagged, glabrous; stipules caducous, broadly triangular, c. 0.5 mm long and wide, margins ciliate. **Leaves** opposite, simple; petioles shallowly grooved in dried specimens, 3.5–8 mm long, glabrous; lamina broadly elliptical, 53–145 mm long and 13–72 mm wide, discolourous, membranous, glabrous, minutely tubercled abaxially, numerous oil dots visible with a lens; base obtuse, rounded, subcordate, cuneate, attenuate or

decurrent; apex narrowly obtuse or acute, entire (although very young leaves have minutely ciliate margins); venation brochidodromous; primary vein sunken on adaxial surface; secondary veins 4 or 5 pairs, angle of divergence from primary vein 60–80°, forming loops 2–4 mm from margin, flush with adaxial surface, raised abaxially; tertiary veins reticulate; numerous small oil dots visible with a lens. **Inflorescence** an axillary glomerule or fascicle, 3–7-flowered; bracts several, clustered at peduncle bases and persistent well after inflorescences have dehisced, broadly ovate. **Flowers** not fragrant, urceolate, c. 5 mm long and 2.5–3.5 mm diam.; peduncle indistinct, up to 0.3 mm long; calyx cupular or cone-shaped, c. 3 mm long and diameter 1.5–2 mm, scurfy abaxially and glabrous adaxially, apex subtruncate or 6- or 7-lobed, scurfy towards apex, green; **petals** 5–7, triangular, connate at base and inserted on cupular disk, 2–3 mm long, fleshy, abaxially papillate, adaxially clothed in minute hairs which intermingle with much longer hairs in the centre towards base of free section, cream or yellow, apex acute; disk accrescent, cupular, c. 0.7 mm high, glabrous, soon expanding around ripening ovary; **stamens** 5–7; filaments strap-shaped, connate or free, 1–2 mm long, upper section papillate; anthers 2-loculed, globose, 0.8–1 mm long, adaxially tufted with hairs; **ovary** sessile, connate with disk, c. 1.7 x 1.7 mm (including style), hemispherical with the style beak-like to c. 0.7 mm long; ovules two; stigma sessile. **Fruiting** peduncle c. 2 mm long. **Fruit** a drupe, enclosed within an expanded disk that completely encloses the ovary, obovoid, 32–46 mm long and diameter 30–36 mm, bright red; epicarp shiny and glabrous except for furfuraceous apex; disk rim at apex narrowly recessed by 3–4 mm, disk rim diameter c. 1.5 mm; style persistent at base of recess, c. 0.5 mm long; mesocarp 7–8 mm thick, palest pink or cream coloured; seed solitary, endocarp ellipsoid or obovoid, 20–22 mm long and 17–19 mm wide, woody and sculptured with irregular longitudinal ribs.

Other specimens examined: Australia: Rocky River, Silver Plains, Nov 1996, *Jensen 807* (CNS); Rocky River crossing, Silver Plains, June 1992, *Sankowsky 1330* (CNS); Rocky River crossing, July 1996, *Jensen 794* (CNS); Rocky River, Silver Plains, eastern fall of Mcllwraith Range, June 1995, *Forster PIF17036* (BRI) *i.d.v.*; Rocky River crossing, June 1995, *Sankowsky 1472* (CNS); Rocky River Scrub, Silver Plains Station, June 1992, *Forster PIF10554, Sankowsky & Tucker* (BRI) *i.d.v.*; Chester River, July 1977, *Hyland 9472* (CNS); Return Creek S of Lockhart on Old Mission Road, Nov 2012, *Gray 9541, Walker, Aland & Dean* (CNS); Middle Claudie River, Iron Range, Dec 2001, *Murphy 1, Legge & Heinsohn* (CNS); Wenlock River, Piccaninny Plains Wildlife Sanctuary, Nov 2008, *Jensen 1688 & Nicholson* (BRI); Wattle Hills, Nov 2021, *Cooper 2829, Addicott & Zich* (CNS).

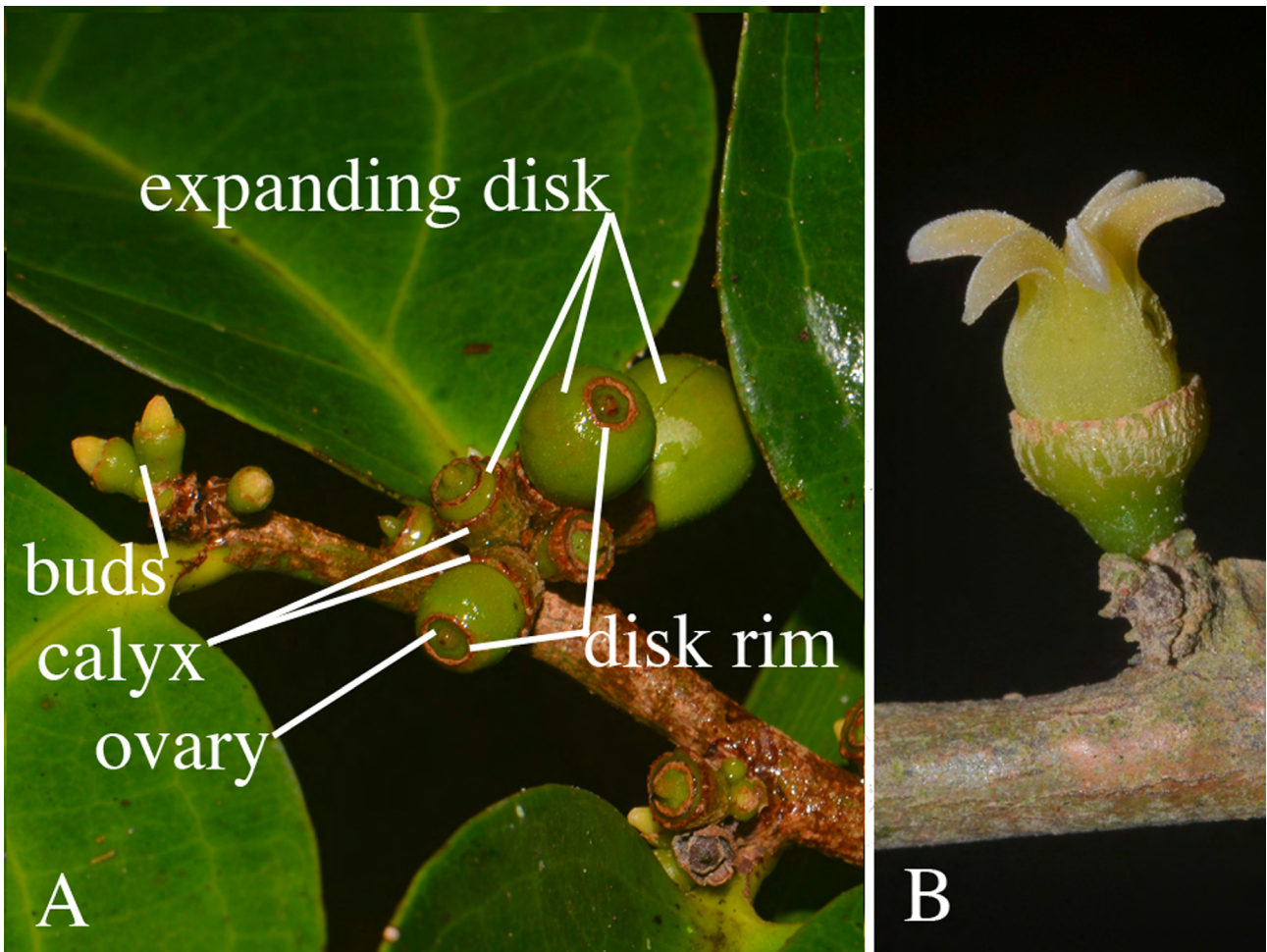


Fig. 1. A. *Anacolosa australis*: A. Glomerulate inflorescence with sessile buds and immature fruit showing a quickly expanding disk rim which eventually encloses the drupe. B. Flower at anthesis A & B (Cooper 2829 [CNS]). **Photos:** F. Zich.

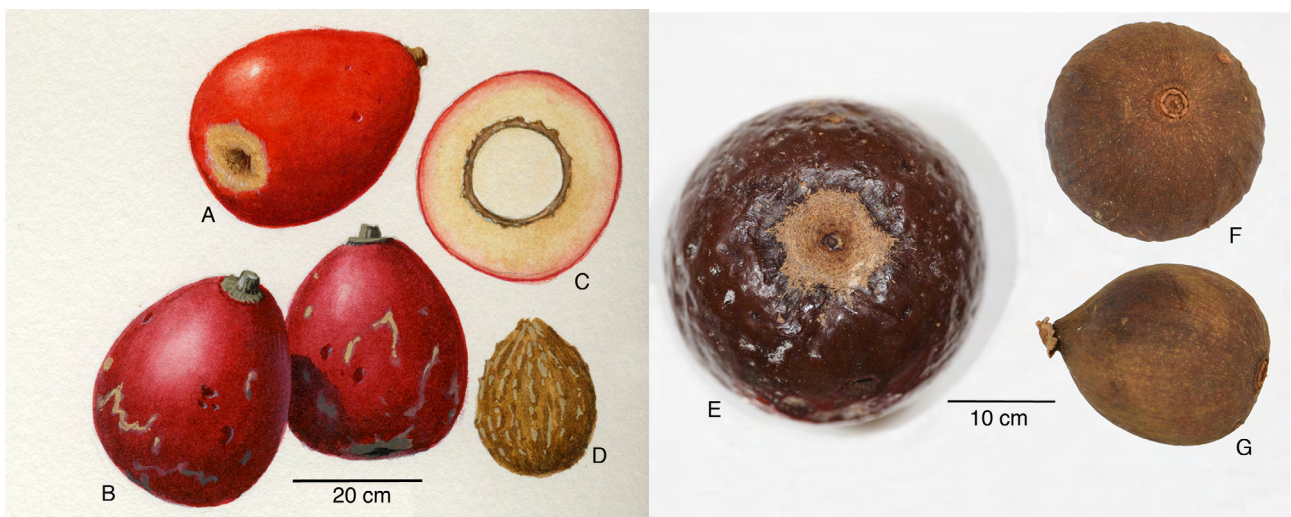


Fig. 2. *Anacolosa australis*: A. Fruit showing furfuraceous apex and deeply recessed disk rim. B. Fruit C. Fruit cross-section. D. Seed. E. Fruit showing scurfy apex, deeply recessed disk rim and stigma. *Anacolosa papuana*: F. Fruit showing glabrous surface, disk rim and stigma \pm flush with fruit apex; G. Fruit lateral view showing disk rim and stigma \pm flush with fruit apex. A. (Jensen 807 [CNS]). B, C & D. (Sankowsky 1472 [CNS]) E. (Murphy 1 [CNS]). **Artwork:** A, B, C & D, W.T.Cooper. **Photo:** E. W. Cooper; F & G. (Galore & Vandenberg NGF 41098[L.1665272]). **Scans:** F & G, F. Loggen (L).

Phenology. Flowers have been recorded in June, July and November. Fruiting has been recorded from June to January.

Distribution and habitat. *Anacolosa australis* occurs in mesophyll rainforest and semi-deciduous gallery forest on Cape York Peninsula from the Rocky River on the eastern slopes of McIlwraith Range to the northern banks of the Pascoe River on Wattle Hills at altitudes from near sea level to c. 50 m.

Anacolosa australis occurs with *Aglaia euryanthera* Harms, *Aleurites moluccanus* (L.) Wild., *Archontophoenix tuckeri* Dowe, *Buchanania arborescens* (Blume) Blume, *Calophyllum australianum* F.Muell. ex Vesque, *Castanospermum australe* A.Cunn. & Fraser ex Hook., *Corymbia tessellaris* Benth., *Decasynina hollrungii* (K.Schum.) Barlow, *Donella lanceolata* (Blume) Aubrév., *Endiandra longipedicellata* C.T.White & W.D.Francis, *Ficus albipila* (Miq.) King, *Garcinia dulcis* (Roxb.) Kurz, *Garcinia warrenii* F.Muell., *Myristica insipida* R.Br., *Nauclea orientalis* (L.) L., *Planchonella chartacea* (F.Muell. ex Benth.) H.J.Lam, *Pongamia pinnata* var. *minor* (Benth.) Domin and *Syzygium bamangense* B.Hyland.

Etymology. The specific epithet is derived from the Latin *australis* (southern), referring to the distribution of the species.

Notes. *Anacolosa australis* differs most noticeably from *A. papuana* in fruit size, shape and apex. The disk rim at the fruit apex is deeply recessed and scurfy in a broad area whereas in *A. papuana* it is flush with the apex, rarely with a narrow scurfy ring.

Fruits in *Anacolosa*, as well as other members of the Aptandraceae, possess a floral disk which, from the time of anthesis, is accrescent and quickly expands to surround the ovary and eventually the entire mature drupe.

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