

Notes — 1. *Calyptrocalyx hollrungii* is distinguished by a clustering or solitary habit, leaves bifid or irregularly segmented or regularly pinnate, paired staminate flowers that are appressed in bud and resemble a pair of rodent teeth, straw-coloured elongate petals; straight or often curling filamentous inflorescence spikes, and orange to red ovoid to ellipsoid fruit with homogeneous endosperm.

2. *Linospadix hellwigiana* is attributable to this species, and represents an irregularly segmented leaf form. Similarly *Paralinospadix clemensiae*, collected from Wareo, an area close to Sattelburg, and *P. schlechterii*, collected from Bismarck Mts, Madang Province, are both attributable to *C. hollrungii*. The former collection displays a regularly pinnate leaf, while the latter has a bifid leaf.

## 12. *Calyptrocalyx julianettii* (Becc.) Dowe & M.D. Ferrero, *comb. nov.*

*Linospadix julianetti* Becc., Webbia 1 (1905) 295. — *Paralinospadix julianettii* (Becc.) Burret, Notizbl. Bot. Gart. Berlin-Dahlem 12 (1935) 334, *syn. nov.* — Type: *Loria & Giulianetti s.n.* (holo FI), Papua New Guinea, Central Province, Mekeo Dist., upper St Joseph River, 'Camp 14', Nov. 1892.

*Paralinospadix amischus* Burret, Notizbl. Bot. Gart. Berlin-Dahlem 12 (1935) 335, *syn. nov.* — Type: *Brass 3826* (holo BRI; iso A n.v., NY n.v.), Papua New Guinea, Central Province, Ononge Road, Dieni, 500 m, 21 Apr. 1933.

Solitary or clustering, small palms. *Stems* erect, 1–2 m tall, 12–24 mm diam.; crown with c. 10 leaves. *Leaves* irregularly segmented, 60–90 by 25–30 cm, with outer margin curved toward the leaf apex; leafbase 14–18 cm long, cylindrical, with scaly tomentum, margin finely lacerate-fibrous; petiole absent, or 1–3 cm by 3–4 mm, shallowly channelled adaxially; lamina 36–70 cm long, outline elongate to elliptical, 5–12 segments per side, segments falcate to sigmoid, rigid, dark green adaxially, lighter abaxially; narrow segments with a single midrib, broad segments with 2–12 ribs, lowest segments shortest, with 1–3 ribs, apical segments broad with 7–9 ribs, midleaf segments narrower than either basal or apical segments, 10–15 mm wide; midribs raised only on adaxial surface. *Inflorescence* 40–90 cm long, 1–4-spiked; prophyll 16–17 cm long; peduncular bract 24–38 cm long, with dark scaly tomentum; peduncle 20–40 cm long, subterete, 1.5–3 mm wide; rameal bracts in distal portion to 2 mm long; rachilla 15–30 cm long, 3–3.5 mm diam., fusiform, with dark scaly tomentum; floral pits distantly to closely spaced, margin raised. *Staminate flowers* 2.5–5 mm long in bud, ovoid; sepals c. 1 mm long, broadly ovate, basally ridged, margins ciliate; petals 2–5 mm long, longitudinally striate, cream; stamens 9; anthers linear, shallowly sagittate, versatile; pistillode narrow, columnar. *Pistillate flowers* with sepals broadly rounded; petal apex briefly triangular. *Fruit* ellipsoid, tapered acutely to the apex, 11–13 mm long, 6–9 mm diam., red; epicarp smooth, minutely linear granular when dry; mesocarp fleshy. *Seed* globose, 5–8 mm diam.; endosperm homogeneous.

Distribution — Indonesia: Papua: Fakfak Division. Papua New Guinea: Morobe, Northern, and Central Provinces.

Habitat & Ecology — In rain forest at 100–1200 m.

Etymology — It was named for the collector of the type specimen, Amedeo Giulianetti, expedition assistant to Dr Lamberto Loria.

Notes — 1. *Calyptrocalyx julianettii* is distinguished by a solitary or clustering habit, irregularly segmented leaves, multi-spiked inflorescence, ellipsoid fruit, and homogeneous endosperm.

2. *Calyptrocalyx amischus*, described from a collection from Dieni, Central Province, Brass 3826 (BRI), is attributable to *C. julianettii*.

### 13. *Calyptrocalyx lauterbachianus* Warb. ex Becc.

*Calyptrocalyx lauterbachianus* Warb. ex Becc., Webbia 4 (1913) 158. — *Grisebachia lauterbachiana* Warb. in K. Schum. & Lauterb. (nomen, 'in Mons. ined.'). Fl. Deutsch. Schutzgeb. Südsee (1900) 206. — *Linospadix lauterbachianus* Warb. ex Becc., Webbia 4 (1913) 158, in obs. — *Laccospadix lauterbachianus* (Becc.) Burret, Repert. Spec. Nov. Regni Veg. 24 (1928) 290. — Type: *Warburg s. n.* (holo B†), Papua New Guinea, Morobe Province, Sattelberg, Apr. 1889. Neotype: *Moore & Millar 9261* (neoholo LAE, here designated; neoiso BH), Papua New Guinea, Morobe Province, ridge trail SW of Bapu village on track to Engabu above Wampit River, 900–1000 m, 4 Mar. 1964.

*Calyptrocalyx stenophyllus* Becc., Bot. Jahrb. Syst. 52 (1914) 32, syn. nov. — Type: *Schlechter 19829* (holo B†; iso FI; photo SING), Papua New Guinea, Morobe Province, Dschischugari, 900 m, May 1909.

*Calyptrocalyx archboldianus* Burret, Notizbl. Bot. Gart. Berlin-Dahlem 12 (1935) 323, syn. nov. — Type: *Brass 5290* (holo BRI; iso A n.v., BO, NY n.v.), Papua New Guinea, Central Province, Mafulu, 1350 m, Sept. 1933.

Solitary or clustering, small to moderate palms. *Stem* erect, 2–9 m tall, 3.5–8 cm diam.; crown with 7–9 leaves. *Leaves* regularly pinnate, semi-plumose, arching, 160–300 cm long, new leaf emerges red; leafbase 40–60 cm long, split almost to the base, green, with dark scaly tomentum, apex with two narrow lanceolate lobes, margins and apex moderately lacerate-fibrous; petiole 20–50 cm by 9–11 mm, adaxially channelled, with scaly tomentum; pinnae 20–60 each side of leaf, opposite to subopposite, in groups of 2–4, set in 1 or 2 planes, 3–9 cm apart, chartaceous, rigid, ensiform, acuminate, dark green adaxially, lighter green abaxially, midrib prominent adaxially, midrib and secondary veins moderately raised abaxially; ramenta on midrib abaxially; midleaf pinnae 45–60 by 3.5–5 cm; lowest pinnae narrow linear to lanceolate, 30–33 cm long, 2–3 cm diam.; apical pinnae 20–30 cm long, 3–3.4 mm wide, flatly falcate, becoming smaller and closer spaced toward the apex. *Inflorescence* 80–200 cm long, 1–6-spiked, axes bright green; prophyll 30–50 cm long, narrow, with dark scaly tomentum; peduncular bract 60–70 cm long; peduncle 68–130 cm long, terete, 4–9 mm diam., with dark scaly tomentum; rameal bracts in the distal portion, spirally arranged; rachilla 19–60 cm long, 3.5–9.5 mm diam., at first with scaly tomentum, then becoming glabrous; floral pits deep, closely spaced or distant, floral pit with a sharp margin, glabrous. *Staminate flower* to 4 mm long in bud, cream to green with purplish bases; sepals c. 2 mm long, broadly ovate to cymbiform, dorsally rounded; petals 3–4 mm long, broadly rounded, apex triangular, outside densely striately-nerved, margin minutely ciliate; stamens 12–24, 5–6 mm long; filaments c. 5 mm long; anthers linear, shallowly sagittate, versatile, pale cream, connective reddish; pollen mostly elliptical in polar view, long axis 19.9–38  $\mu\text{m}$ , short axis 14.5–27.2  $\mu\text{m}$ , monosulcate, exine finely reticulate. *Pistillate flower* cream tinged pink; sepals cymbiform, dorsally round-