ovoid to subconical, c. 9 mm high; sepals c. 3 mm long; petals c. 9 mm long; stigma small. *Fruit* globose to ellipsoid, 40–60 mm long, 20–30 mm diam., orange to bright red; epicarp smooth; mesocarp densely fibrous, fibres aggregated toward the endocarp; endocarp fibrous to crustaceous. *Seed* globose to subglobose 20–30 mm diam.; endosperm ruminate.

**Distribution** — Indonesia: Moluccas: Ternate, Halmahera, Baru, Ceram, and Ambon.

**Habitat & Ecology** — In rain forest at 0–60 m.

**Etymology** — The specific epithet is from *spicate* — spike bearing, and refers to the morphology of the inflorescence.

**Vernacular names** — Hena hena (Moluccas, Ternate), and hoea alang (Moluccas, Hito) (Miquel, 1855).

**Notes** — 1. *Calyptrocalyx spicatus* is distinguished by a large solitary habit, regularly pinnate leaves, solitary or 2-spiked inflorescence, large globose to ellipsoid fruit and ruminate endosperm.

2. The seed is used as a betel nut substitute.

### 26. Calyptrocalyx yamutumene Dowe & M. D. Ferrero, *spec. nov.* — Fig. 4

Clustering, small palms. *Stems* 2–5, to 2.5 m tall, 10–30 mm diam.; internodes 2–3 cm long, green; crown with 11–14 leaves. *Leaves* entire, deeply bifid, 95–120 by 11.5–25 cm; leafbase 14–17 cm long, green, margin moderately lacerate-fibrous; petiole absent or to c. 1 cm long; lamina bifid, lobes elongate, ribs 7 or 8 per side, prominent, closely angled to the rachis; lamina coriaceous, dark green adaxially, lighter green abaxially. *Inflorescence* 55–96 cm long, 1-spiked; prophyll 6.5–12 cm by 10–12 mm; peduncular bract 13–27 cm by 1.5–4 mm; peduncle 40–62 cm by 1.5–2 mm, subterete, longitudinally striate with deciduous brown scales; rameal bracts 2–4, to 12 mm long, in the distal portion; rachilla 15–34 cm long, 2–3 mm diam., narrowing toward the apex, with deciduous brown scales; floral pits well spaced, shallow, lip with a sharp margin. *Staminate flower* bright yellow, c. 3.5 mm long in bud, opening widely at maturity; sepals c. 1 mm long, carinate, translucent, margins ciliate; petals obtuse, c. 3 mm long; stamens 8 or 9; filaments 3–4 mm long; anthers c. 1 mm long, shallowly sagittate, versatile, yellow; pistillode columnar, c. 1.5 mm long. *Pistillate flower* c. 3 mm high, globose, white; stigma large. *Fruit* broadly ellipsoid, 16–18 mm long, 10–12 mm diam., red; epicarp smooth, glossy; mesocarp fleshy to mealy, tan to yellow pulp; fibres thick, throughout the mesocarp but densely congested toward the endocarp. *Seed* ovoid, 9–11 mm long, 6–7 mm diam.; endosperm homogeneous.

**Distribution** — Indonesia: Papua: Jayapura Division, Cyclops Mts where it is known but without collections. Papua New Guinea: W Sepik Province, Bewani Mts.

**Habitat & Ecology** — In rain forest at 100–900 m.
Fig. 4. *Calyptrocalyx yamutumene*. Dowe & M.D. Ferrero. a. Habit, with dominant stem and basal sucker; b. leaf; c. portion of rachilla with floral bracts; d. staminate flower; e. fruit; f. fruit in longitudinal section; g. fruit with epicarp removed to reveal mesocarp fibres. — Scale bars: a = 40 cm; b = 5 cm; c = 4 mm; d = 1 mm; e–g = 8 mm (from *Dowe & Ferrero 508*). Drawing by Lucy T. Smith.
Etymology — The specific epithet is a name derived from the Bewani language coined by Mr Moses Meiwa of Apambo village, Bewani, to facilitate practical field recognition of this species: \textit{yamu} — stem or stick as well as the name for \textit{Linospadix albertisiana}, and \textit{tumene} — large.

Notes — 1. \textit{Calyptrocalyx yamutumene} is distinguished by a clustering habit, bifid apetiolate leaves, solitary-spiked inflorescence, broadly ellipsoid fruit, and homogeneous endosperm.

2. The crushed endosperm has a salty flavour that is used to enhance the taste of food.

**LINOSPADIX**

\textit{Linospadix} H. Wendl. in H. Wendl. \& Drude, Linnaea 39 (1875) 177, 198. — Type: \textit{Areca monostachya} Mart. [= \textit{Linospadix monostachya} (Mart.) H. Wendl. 'as \textit{L. monostachyos}'].

\textit{Bacalaria} F. Muell., Fragm. 7 (1870) 103, nomen in obs.; 11 (1878) 58; Hook.f., Bot. Mag. 108 (1882) t. 6644; in Benth. \& Hook., Gen. Pl. 3 (1883) 903. — Type: \textit{Bacalaria monostachya} (Mart.) F. Muell. [= \textit{Linospadix monostachya} (Mart.) H. Wendl.].

\textit{Linospadix} subg. \textit{Bacularia} (F. Muell.) Drude in Engl. \& Prantl, Nat. Pflanzenfam. 2, 3 (1887) 67. — Type: not designated.


Solitary or clustering, small to moderate, pleonanthic, monoecious palms. \textit{Stems} slender, leaf scars conspicuous; internodes elongate. \textit{Leaves} bifid, or irregularly segmented or regularly pinnate; leafbase clasping, margins smooth or fibrous, not forming a cylindrical crownshaft but vertically split opposite the petiole; petiole elongate or absent (Australian species only), adaxially channelled, abaxially rounded; pinnae single or united, apices praemorse when united, acuminate when not united. \textit{Inflorescence} proterandrous, interfoliar, solitary, spicate; prophyll dorsi-ventrally compressed, bicarinate, attached at the base of the peduncle, enclosing inflorescence in bud, persistent; peduncular bract tubular, attached at the apex of the peduncle, apically closed, deciduous; peduncle elongate, erect; rachilla c. the same length of the peduncle to much less. \textit{Flowers} spirally arranged in shallow floral pits, pit margins lipped and smooth; in triads of a single pistillate flower with two lateral staminate flowers in proximal portion of the rachilla, paired or solitary staminate flowers in distal portion. \textit{Staminate flower} symmetric in bud; sepals broadly imbricate; petals 2 or 3 times longer than sepals, apically valvate; stamens 4–20, erect, filaments shorter than the petals; anthers sagittate, subbasi- to approaching basifixed, non-verseatile, dehiscence latrorse; pollen circular to elliptical in polar view, monosulcate, exine tectate, finely to coarsely reticulate; pistillode absent or small. \textit{Pistillate flower} globular, smaller than, c. the same size or larger than the staminate flower; sepals broadly imbricate; petals with thickened valvate tips, longer than the sepals; staminodes 3–6, toothlike; stigmas recurved, 3-lobed, smooth. \textit{Fruit} ellipsoid, cylindrical, globose or pyriform, yellow (Australian species only) or red at maturity; stigmatic remains apical; epicarp longitudinally striate, or smooth or rugose (Australian species only), dries smooth; mesocarp thin, fleshy, longitudinal fibres appressed to endocarp; endocarp adhering to the seed. \textit{Seed} globose to ellipsoid, subbasally attached, raphe attached for less than 1/2 length of seed;