



Daemonorops komsaryi (Arecaceae)—a new rattan from the Bird's Head Peninsula, Indonesian New Guinea

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Abstract

Daemonorops komsaryi (Arecaceae), a new species of rattan from the Bird's Head Peninsula in West Papua, Indonesia, is described and illustrated. This species closely resembles *D. calapparia*, but is distinguished by having more than 60 leaflets on each side of the leaf rachis, and in having slender, rigid, long blackish-brown spines and long petioles.

Keywords: Palms, Papuasias, taxonomy, rattans

Introduction

Since 1995 several herbarium collections of the genus *Daemonorops* have been made in the western part of the Bird's Head Peninsula and neighbouring islands in New Guinea. The rattan is usually very robust and its sheaths are covered by very long brownish-black spines. This rattan is only found in Raja Ampat Islands and around Sorong on the mainland. In these areas, the rattan has been used traditionally and commercially. Nine herbarium specimens collected in different localities near Sorong and the Raja Ampat Islands were compared with 57 other specimens of *Daemonorops* from Sulawesi, Maluku, and Nusatenggara, housed at Kew (K), Herbarium Bororiense (BO) and Herbarium Manokwari (MAN), leading us to conclude that the New Guinea material represents an undescribed species. The research is part of taxonomic work for the Palms of New Guinea project (Baker 2002) and is a further addition to the growing list of new rattans discovered recently on the island (e.g. Baker & Dransfield 2014, Maturbongs *et al.* 2014).

Taxonomic treatment

Daemonorops komsaryi Maturb., J. Dransf. & Mogeia, *sp. nov.* Type:—INDONESIA. West Papua: Waifo Village, Waigeo Island, 26 May 1997, Maturbongs 513 (holotype K!, isotype MAN!, BO!)

Diagnosis:—Similar to *D. calapparia*, but distinguished by having more than 60 leaflets on each side of the rachis, by having a much longer petiole and in the leaf sheath armature composed of slender, rigid, long blackish-brown caducous spines.

Moderately robust to very robust clustering rattan climbing to 25 m high. **Stem** with sheaths 40–80 mm diam., without sheaths to 23–30 mm diam.; internodes 16–25 cm long. **Leaf** cirrate 3.8–5.6 m long including petiole and cirrus; sheath yellowish brown, bearing cream to chocolate-coloured indumentum, densely armed with rather irregular partial whorls of long needle-like brown to black spines, the longest to 50 mm long, usually much less, spirally oblique but sometimes not so, caducous and leaving irregular bases giving old sheaths a rough appearance, sparse short black spinules also present; knee well developed, 90–60 × 47–44 mm, armed, with conspicuous ridge and sometimes spinules at the base; ocrea very short or inconspicuous; petiole 20–55 cm long, 25–35 mm wide and 12–20 mm thick at the base, abaxially convex rather flat toward the tip, adaxially concave to the middle, bearing cream or dark brown indumentum, smooth to very densely armed on adaxial surface and both edges, with groups of downward pointing

black spines, sometimes with the longest spines to 30 mm; rachis 1.7–3 m long, adaxially smooth sometimes armed with triangular short spines toward the tip, both edges smooth, sometimes densely armed with long bristles from the petiole to the tip, abaxially smooth at the base, clawed from the middle through to the cirrus, each claw consisting of 3–8 spines; leaflets 68–91 on each side of the rachis, leathery, rigid, with creamy-brown indumentum at base and tip, subopposite, sometimes opposite, 3.5–4.5 cm distant, more distant toward the tip, linear, the longest leaflet 64×3.5 cm, mid-leaf leaflets 26–49 × 1.2–3.4 cm, acuminate, abaxially bristly on 3 nerves and both margins, primary nerves 3, secondary nerves 7–8, transverse veinlets crowded, conspicuous; cirrus 1–2 m long, with regularly arranged black claws, 50–70 mm apart, closer and shorter towards the cirrus tip. **Staminate inflorescence** 60–135 cm long, curving away from the stem, branched to 3 orders; prophyll c. 35 × 6 cm, leathery, splitting along its length and opening, but persistent, bearing dark brown indumentum and abundant scattered or grouped slender brown to black spines to 25 mm long, these caducous leaving rough bases; rachis bracts similar to prophyll, caducous or persistent, the distal tending to be more sparsely armed, or unarmed; partial inflorescences 5–10, the basal to 35 cm long, distal partial inflorescences much smaller; rachillae scarcely diverging from each other, crowded, the longest to 40–60 × c.1 mm. **Staminate flowers** not seen, already fallen. **Pistillate inflorescence** ranging from 60–120 cm long including 3–15 cm peduncle, pendulous at maturity, branched to 2 orders; prophyll 30–23 × 8–6 cm, leathery, boat shaped sometimes tubular including 30 mm beak bearing brown to dark brown indumentum, densely armed with fine brown to black spines, to 25 mm long; prophyll and other primary bracts strongly overlapping; peduncular bract absent; rachis bracts 10 bracts in all, armed with dense brownish-black spines, the inner bracts unarmed in $\frac{3}{4}$ bract; splitting down one side, and often falling at anthesis, only prophyll persistent in the infructescence, all bract rather thick and woody; primary branches 5–10, to 28 cm long, 9–15 cm apart, sometime congested, with up to 24 rachillae; rachillae 30–70 × 2–3 mm, upwards; rachilla bracts absent; scar of sterile staminate flower conspicuous. **Pistillate flowers** small, oblong, up to 6 mm long; calyx 1 × 2.5 mm with three small acute points; corolla about 1.5 times longer than calyx, staminodes 6, anther up to 1 mm long, filaments up to 1.5 mm long, stigma 3, recurved. Fruit spherical, 22–28 × 18–21 mm including beak 0.5 mm, with 13–15 longitudinal rows of deeply channelled, grooved yellowish-purple or reddish-yellow scales. Seed (sarcotesta removed) 12.7–16.1 × 15.1–16.2 × 10.5–11 mm, spherical, shallowly channeled from the top to the base with a deep pit at the base with a deep pit at the base; endosperm ruminant; embryo basal. **Germination** adjacent-ligular.

Distribution:—Known from Sorong and the Raja Ampat Islands (Salawati, Batanta, Waigeo, Gag and Misool); *Daemonorops komsaryi* is the only species of the genus on the island of New Guinea, where it is at the easternmost limit of its range.

Habitat:—Growing in primary and secondary lowland forest to lower montane forest up to 600 m elevation.

Uses:—In Sorong, the cane of this species is used for furniture, whereas in Batanta Island, the leaf is used for roofing traditional houses.

Vernacular names:—Wil-hne (Salawati), Wil-he (Batantan), Dou-aise (Waigeo)

Specimens examined:—INDONESIA. West Papua: Sorong city, Klasaman Km14, 60 m, 0°55'S, 131°22'E, 15 September 1995, *Maturbongs* 277 (K!, MAN!, BO!), 16 September 1995, *Maturbongs* 282 (K!, MAN!); Salawati Island, 28 July 1996, *Maturbongs* 301 (K!, MAN!); Batanta Island, 31 July 1996, *Maturbongs* 308 (K!, MAN!, BO!); Waigeo Island, Waifo Village, 26 May 1997, *Maturbongs* 513 (K!, MAN!); Waigeo Island, Yensner Village, 27 May 1997, *Heatubun* 86 (MAN!); Misool Island, 18 January 2002, *Heatubun* 350 (K!, MAN!); Misool Island, 20 January 2002, *Maturbongs* 696 (K!, MAN!, BO!); Gag Island, near Kapatpopo, 25 July 2006, *Heatubun* 738 (AAU, BO, K!, MAN, NY)

Notes:—This striking rattan is named after the late Mr. T. N. Komsary, the First Director of Herbarium Manokwariense, who had a strong interest in the rattans of Papua. *Daemonorops komsaryi* approaches *D. calapparia*. Both of them are clustering rattans and with leaflets of more or less the same-size. However, in the new species there are more than 60 leaflets on each side of the rachis while in *D. calapparia* there are 40 or fewer. The armature on the sheath is different, allowing the species to be easily identified. *Daemonorops komsaryi* is characterized by caducous slender, rigid, long, blackish-brown spines on rough sheaths, and long petioles; in contrast *D. calapparia* has shorter petioles and slender, hairy, flexible, long, yellowish-brown spines on the sheaths.

Daemonorops komsaryi occurs in areas close to Sorong on the New Guinea mainland and Raja Ampat Islands (Salawati, Batanta, Waigeo, Misool, Gag). The species could become endangered because of its limited distribution and the acceleration of forest disturbance by logging companies, and other human activities in that areas.

Records for the occurrence of the genus *Daemonorops* in New Guinea (e.g., in Uhl & Dransfield 1987, Dransfield *et al.* 2008) are based on a collection in Leiden herbarium (*Sijde BW 4107*) from Sorong. Initially identified by one of us (JD, in 1980) as *D. calapparia*, notes written at the time suggest this is *D. komsaryi*, but we have been unable to confirm this.

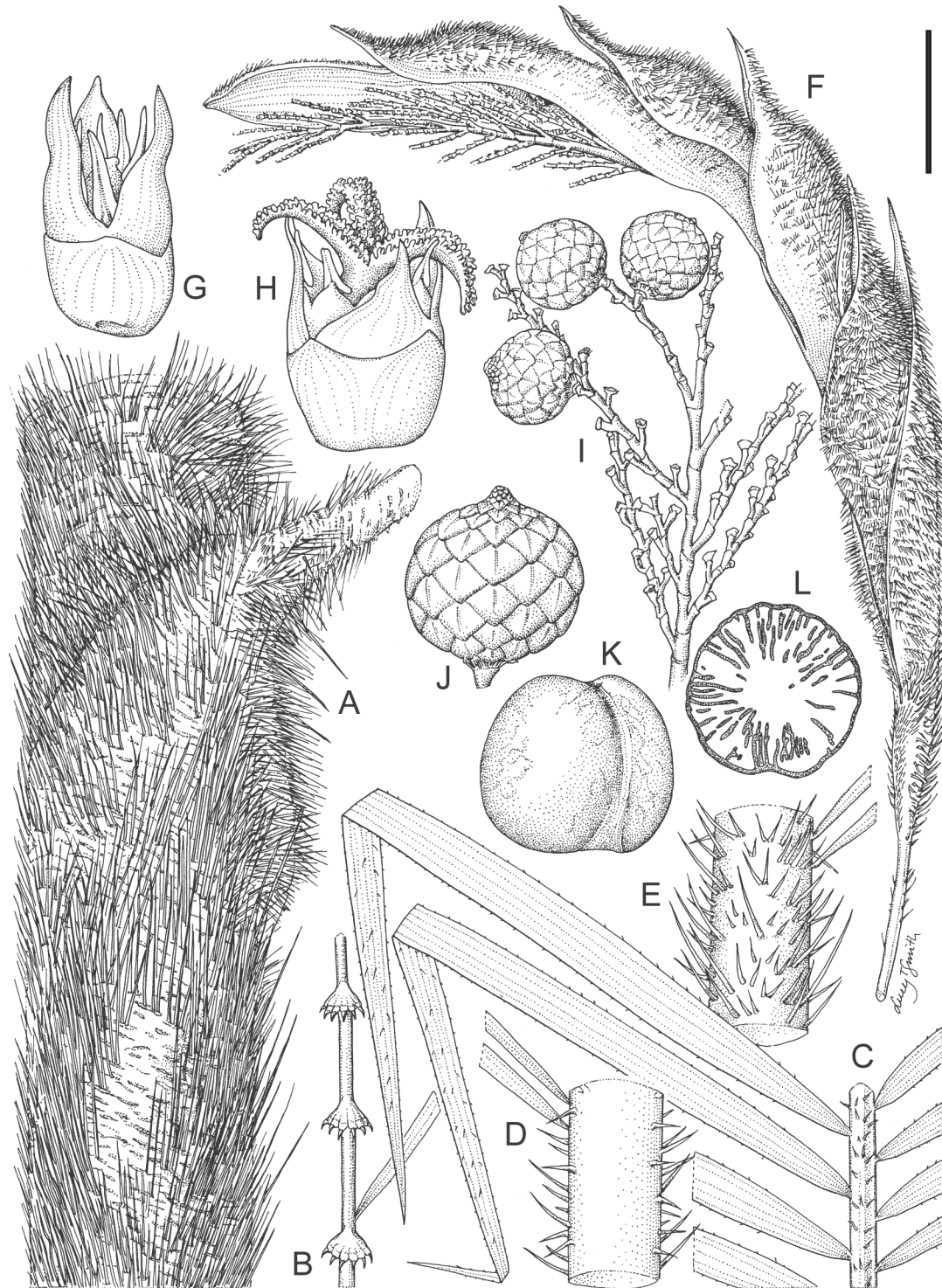


FIGURE 1. *Daemonorops komsaryi*. A. Leaf sheath. B. Portion of cirrus. C. Mid-portion of leaf. D. Abaxial surface of petiole. E. Adaxial surface of petiole. F. Pistillate inflorescence. G. Sterile staminate flower. H. Pistillate flower. I. Portion of inflorescence with fruit. J. Fruit. K. Seed. L. Seed in cross section. Scale bar: A, D–E = 4 cm; B, F = 6 cm; C = 8 cm; G = 3.3 mm, H = 5 mm, I = 2.5 cm; J–L = 1.5 cm. A–F from *Maturbongs 513*, I–L from *Maturbongs 282*. Drawn by Lucy T. Smith.

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