

preliminary studies indicate that many of these will be reduced to synonymy.

***Licuala crassiflora* Barfod sp. nov.**

Arbuscula solitaria, habitu *L. lauterbachii* similis, a qua caule indumento coacto, spinis brevibus paucis basi petioli differt; inflorescentiae valde flexuosae, pilis ad instar caudae leonina tectae; flores quasi 12–14 mm longi, rotundati, glabri, carnosii, calyce viridi et corolla alba; fructus lutei maturitate, 3–4 × 2.0–2.5 cm, endocarpio longistrorsum sulcato. Typus: Papua New Guinea, Sandaun Province, Barfod 402 (Holotypus AAU; isotypi LAE, K).

Solitary palm up to 7 m tall. Stem ca. 7 cm diam., whitish, covered with feltlike tomentum. Leaves 11 in crown; leaf sheath 50–60 cm long, tubular, disintegrating apically in older leaves, the distal one-half to three-quarters of the remnant sheath irregularly breaking up in a brown fibrous mesh; transition from leaf sheath to petiole gradual, petiolar part variable in length up to 225 cm long, with few minute spines at the base, adaxial face flattened, basally rough and brown with fibrous sheath remnants, distally green in the middle and flanked by two brown stripes, these gradually narrowing, not recognizable 40–50 cm above the petiole base, abaxial face rounded, covered with minute ferruginous, adpressed scales decreasing in density to patchy towards the middle portion; blade glabrous above, with ferruginous scales along major veins below, divided along abaxial ribs into about 15 segments, mid-segment with about 20 adaxial ribs, 90–95 cm long, truncate at the apex and 28–30 cm wide, the remaining segments with 4–5 adaxial ribs, basal segment 70–75 cm long, obliquely truncate at apex, splits of individual segments leading to abaxial ribs 3–10 mm long, splits leading to adaxial ribs 1–4 cm long, basal segments with generally deeper splits than the mid-segment. Inflorescences 3–5 in a single palm, interfoliar, bending forth and back immediately above insertion of the partial inflorescences in a zig-zag pattern, 170–190 cm long; prophyll 18–20 cm long, distinctly bicarinate, brownish chartaceous, splitting apically along abaxial and adaxial faces; peduncle 45 cm long, covered with patches of long ferruginous hairs splitting apically and shrivelling; peduncular bracts lacking; proximal rachis bract 15 cm long, inserted about 22–30 cm above prophyll, greenish, chartaceous to coriaceous, splitting more or less cleanly apically, covered with ferruginous tomentum, distributed in patches. Partial inflorescences about 7–9, gradually decreasing in size towards the distal end, covered with ferruginous tomentum decreasing in density towards the flower bearing parts; rachis

of proximal partial inflorescence 5–6 cm long, with 4–5 rachillae, these 25–26 cm long and covered with minute stellate hairs; rachillae uniform in three basal partial inflorescences, the length gradually decreasing in the following ones. Flowers 80–90 on longest rachillae, inserted in pairs or solitary, borne on raised points or tubercles (these drying shiny, dark brown), ovoid, 12–14 × 6–8 mm, pointed apically in bud, fleshy; calyx 6–7 mm long, shiny green, glabrous, fused to receptacle in basal 2 mm, lobes rounded about 2 mm long, calyx and receptacle fused to immediately below the insertion of the corolla; corolla three parted, 7.5–8.5 mm long, glabrous, fleshy, whitish-green with reddish tinge at the base of the exposed parts, fused basally for 3–4 mm, moderately reflexed at anthesis; androecium 5–5.5 mm long, tubular, three-lobed apically, whitish, fused with the corolla in basal 2 mm, filaments 6, subulate, about 0.5 mm long, inserted at two levels, in between and on the tip of the lobes of the androecial tube, anthers elongate, about 1.5 mm long; gynoecium borne on about 1 mm long extension of the receptacle above the level of insertion of the corolla, 4.0–4.5 mm long, turbinate, glabrous; ovary 2.5–3.0 × 1.2–1.5 mm, reddish inside when cut open; style about 1.5 mm long; ovule hemianatropous. Flowering sequence erratic. Fruit yellow 3.5–4.5 × 2.0–2.5 cm, apically obtuse to rounded; endocarp about 3–4 cm long, lens-shaped in cross section with 10–11 longitudinal ribs, the one running along the raphe much larger to 7 mm wide, the remaining ones more or less regularly arranged, 2–4 mm wide. Seed attached basally; endosperm homogeneous, penetrated on the chalazal side by a large lobed intrusion of seed coat, this visible in young fruits as pink coloration, later brown, lined by a black layer, raphe conspicuous. (Fig.1, 2).

DISTRIBUTION: Known only from two collections from the Bewani region in the Sandaun province of Papua New Guinea.

SPECIMENS EXAMINED: PAPUA NEW GUINEA. Sandaun Province, Bewani subdistrict, near Ituly village, 3°02' S, 141°08' E, 200–250 m, 26 Nov. 1996, Barfod 402 (holotype AAU; isotypes LAE, K); near Ituly village, 03° 01.471' S, 141° 08.334' E, lowland, 28 Feb 2000, Barfod, Banka & Kjaer 492 (AAU, BRI, LAE, K).

LOCAL NAMES AND USES: *Brunei bral*, *Brubenei bral* (Bewani dialect). The stems are used for posts in houses. Occasionally, bows or digging sticks are produced from the peripheral part of the stem. The leaves are sometimes used for thatching of temporary shelters in the forest (Ferrero 1997).

NOTES: *Licuala crassiflora* is a distinct palm resembling *L. lauterbachii* Damm. & K. Schum. in its overall vegetative appearance but different from any known species of *Licuala* in its flowering and fruiting parts.

DISCUSSION

Licuala crassiflora belongs to a group of New Guinean species that are characterized by having rather large fruits and furrowed endocarp. The latter is an interesting feature that was noticed recently by Ferrero (1997). In most species of *Licuala*, the smooth endocarp forms very late in the development of the fruit.

Licuala crassiflora shares large fruits and ornamented endocarp with *L. beccariana* Furt., a widespread species in northern Papua New Guinea. This understory palm is solitary with a robust stem, often 40–50 cm long and pro-cumbent. The inflorescences elongate rapidly during early developmental stages. At the time of emergence, the inflorescence is often adpressed to the spear leaf in the center of the crown. The partial inflorescences are spicate or branched into 2 or 3 rachillae. Throughout development of the infructescence, the peduncle continues elongating. The large brown fruits acquire a reddish tinge when ripe. Their weight forces the entire infructescence downwards eventually bringing the fruits into contact with the ground. This feature combined with the reinforced endocarp and the short stem, suggests that the fruits of *L. beccariana* are dispersed by ground-dwelling animals. Jungle fowl and cassowary are common in the area where *L. beccariana* occurs. It needs to be verified, however, whether the seed can germinate after passage through the crops of these birds.

The dispersal mechanism probably differs in *Licuala crassiflora* given that it is a much larger palm and has pronounced differences in inflorescence structure. Similar adaptations such as large fruits and ornamented endocarps, however, suggest that dispersal by large birds is involved.

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