

Additions to the Palms of Fiji

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Shortly after an account of the Arecaceae in Fiji was published (Moore 1979), one of us (S.V.) discovered undescribed palms, one on the eastern side of Taveuni and another near Galoa, Viti Levu. Another of us (R.H.P.) has been checking on the cultivated representatives. All three of us joined in an expedition to Taveuni in March 1980 (see pp. 138-140), and collected a complete series of what has proved to be a new genus of arecoid palms in the *Clinostigma* alliance (Moore 1973) while Moore and Phillips collected a series of the second wild palm on Viti Levu which proves to be a new species of *Gulubia*, a genus heretofore known from Northeastern Australia to the New Hebrides. We report on our findings below.

Indigenous Palms

Alsmithia H. E. Moore, *gen. nov.* Arecoideae: Clinostigmatheae (Fig. 1).

Alsmithia longipes Moore & Vodonaivalu, *sp. nov.*

*Gulubia sp. nov.*²

Cultivated Palms

Areca triandra

Pelagodoxa henryana

Thrinax sp.

Alsmithia H. E. Moore, *gen. nov.*

Palmae monoicae solitariae. Folia regulariter pinnata vaginis aperienti-

bus pinnis acutis unicostatis. Inflorescentiae interfoliales paniculatim ramosae prophylo pedunculum longum omnino vaginante. Flores in triadibus dispositi staminibus floris masculi 6 in alabastro filamentis inflexis antheris dorsifixis pistillodio floris masculi in alabastro quam staminibus breviorae apice vix capitato. Fructus reliquiis stigmaticis apicaliter praeditus endocarpi operculato fibris crassis adnatis sculpto semine carinato obtusatis ornato endospermio homogeneo embryone basali.

Single-stemmed, slender, unarmed, monoecious, pleoanthic palms.

Leaves regularly pinnate; sheath soon splitting opposite petiole, not forming a crownshaft; petiole rounded beneath, shallowly channeled above; rachis rounded beneath, angled above; pinnae borne in one plane, 1-ribbed, acute, midrib elevated above, prominent beneath and with 3 prominent veins and thickened marginal vein on each side, ramenta not evident.

Inflorescences interfoliar, erect, paniculately branched, protandrous or rarely entirely staminate; peduncle elongate, flattened; prophyll flattened, completely encircling the peduncle at insertion, more or less persistent, tubular basally, unilaterally split at apex; peduncular bract much exceeding the prophyll, splitting along one side, caducous; rachis elongate, with lower branches once-branched, upper simple, bracts subtending axes evident, acute to rounded, bracts subtending triads low, rounded.

Flowers borne in triads of 2 staminate and a pistillate proximally, the

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² This species will be described by F. B. Essig in a forthcoming treatment of the genus.



1. *Alsmithia longipes*, on trail along ridge from Wainibau River to crest of the mountains on eastern side of Taveuni. Note long petioles. Photo by H. E. Moore, Jr.

pistillate aborted and staminate flowers paired or solitary distally, bracteoles surrounding the pistillate flower nearly equal, rounded; staminate buds longer than pistillate buds at staminate anthesis, symmetrical; sepals 3, imbricate, rounded; petals 3, valvate; stamens 6, filaments subulate, inflexed at the apex in bud, anthers dorsifixed, oblong, dehiscent by longitudinal slits, emarginate at apex, briefly bifid at base, connective dark; pistillode cylindrical-conic, slightly shorter than stamens in bud, rounded apically; pistillate flowers ovoid; sepals 3, broadly imbricate, rounded; petals 3, broadly imbricate except briefly valvate apices; staminodes 3, narrowly triangular, at one side of gynoecium; gynoecium obovoid, with 3 low linear stigmas scarcely exerted, unilocular,

uniovulate, ovule pendulous, hemianatropous.

Fruit ellipsoid and smooth when fresh, drying irregular and lineolate; epicarp smooth; mesocarp pale, parenchymatous, thick, with many short, oblique fibers beneath epicarp, tannin cells not obvious; endocarp thin, fragile, operculate, with thickened adnate fibers irregularly sculptured, ridged, and grooved, rostrate at apex, tapered basally and with a mass of slender fibers within framework of thickened fibers at base, operculum rounded, basal: seed angled in cross section, briefly rostrate with elongate hilum adaxially, 3 rounded ridges laterally and abaxially, flattened basally, raphe branches anastomosing laterally and apically; endosperm homogeneous; embryo basal.

Distribution. One species in wet forest at 300 m and higher on eastern side of Taveuni, Fiji Islands.

Alsmithia is distinct from all genera in the *Clinostigma* alliance (Moore 1973) to which it is assigned in its combination of prophyll completely encircling the peduncle at insertion and irregular seed. The latter has a prominent adaxial ridge, three rounded lateral and dorsal ridges, and is enclosed in a fragile operculate endocarp to which very thick fibers are adherent in an irregularly ridged, furrowed, and sculptured structure unique in the alliance.

The nature of the seed suggests a relationship to four genera, two of which—*Burretiokentia* and *Veillonia*—are endemic to New Caledonia, one of which—*Cyphosperma*—is shared by New Caledonia and Fiji, and the fourth of which—*Physokentia*—occurs from New Britain to Fiji but is lacking in New Caledonia. *Alsmithia* differs from these genera, however, in the completely encircling base of the prophyll at insertion, in the oblique fibers that underly the epicarp, and in the extraordinary fibers about the endocarp that resemble to some degree those of *Ptychococcus* among genera of the *Ptychosperma* alliance. There is a striking habitual resemblance to species of *Cyphosperma* and it is tempting to suggest that *Alsmithia* represents the sort of palm one might predict for an early stage in the evolution of those genera with irregular endocarp and seed in which the prophyll has become congenitally open abaxially.

In recognition of the many years he has devoted to the study of the flora of Fiji, the generic name has been coined from that of Albert Charles Smith, author of *Flora Vitiensis Nova*. The specific epithet is drawn from the elongate peduncle of the inflorescence and the similarly extended petiole.

Alsmithia longipes* H. E. Moore, *sp. nov.

Caules ad ca. 4.5 m alti. Folia 3.6 m longa pinnis in quoque latere 28–36. Fructus coccineus ellipsoideus 3.2–3.7 cm longus 2.2–2.5 cm in diam.

Trunk brown, irregularly ringed, ca. 4.5 m high, 7.5 cm in diam.

Leaves 10–12, spreading, often reddish when expanding; sheath green with minute pale brown scales, ca. 56 cm long; petiole elongate, ca. 80 cm long or more, green with pale brown membranous peltate scales; rachis ca. 1.8 m long, green; pinnae 28–36 on each side, green above, duller green and neither lepidote nor punctulate beneath, basal ca. 28–60 cm long, 0.5–0.7 cm wide, median ca. 62–72 cm long, 4.7–5.8 cm wide, apical ca. 32–37 cm long, 0.8–2 cm wide.

Inflorescences to ca. 1.28 m long; peduncle 43–60 cm long, green with brown tomentum; prophyll 30–55 cm long, 2.5–5.5 cm wide, green and minutely brown lepidote; peduncular bract inserted 17–22 cm above prophyll, ca. 50–95 cm long, green with minute brown scales; rachis 27–50 cm long, green with brown tomentum, bearing 17–18 branches, the lower branches to 67 cm long with peduncular base ca. 13 cm long, rachis ca. 13 cm long, ca. 7 branches with rachillae to ca. 42 cm long bearing triads in the lower half or more, the flowering axes puberulous, creamy-white at anthesis, becoming red-brown to green and 6–7 mm in diam. in fruit.

Flowers creamy-white, staminate buds ca. 4.5 mm long; sepals minutely ciliate, 1.5 mm high, 3 mm wide; petals 4.5 mm long, 3 mm wide, adnate to receptacle ca. 1 mm, lined when dry; stamen filaments white, 4.5 mm long at anthesis, anthers yellow, 2 mm long; pistillode orange, 3 mm long; pistillate flowers ca. 5.5 mm

high; sepals minutely ciliate, 3 mm high, 5 mm wide; petals 5.5 mm high, adnate to receptacle ca. 1 mm, laterally ciliate; staminodes white with brownish tips, 1.5 mm high.

Fruit bright crimson, 3.2–3.7 cm long, 2.2–2.5 cm in diam.; mesocarp with parenchyma ca. 4 mm, thick; seed brown, 1.4 cm high, 1.6 cm wide, 1.3 cm thick.

Distribution. Wet forest on ridge and steep slopes, ca. 300–500 m.

Specimens examined. FIJI. TAVEUNI: Wet forest on trail along ridge from Wainibau River to crest of mountains on eastern side of Taveuni beyond Lavena Village, 325 m., 25 Mar 1980, H. E. Moore, Jr., R. H. Phillips, & S. Vodonaivalu 10545 (BH, holotype; K, P, SUVA, US, isotypes); track from Lavena Village to Lake, 1,500 ft., 12 Sep 1979, S. Vodonaivalu L.31471 (BH, SUVA).

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