

6. *Veillonia alba*. a, portion of rachilla with paired staminate flowers, $\times 2$; b, dyad with staminate flowers removed to show bracteoles, $\times 4$; c, staminate bud, $\times 4$; d, staminate bud in vertical section, $\times 4$; e, sepal of staminate bud, interior view, $\times 4$; f, petal of staminate bud, interior view, $\times 4$; g, androecium and pistillode, $\times 4$; h, stamens in three views, $\times 8$; i, pistillode, $\times 8$; j, portion of rachilla with triads, $\times 2$; k, triad with flowers removed to show bracteoles, $\times 4$; l, pistillate bud, $\times 4$; m, pistillate bud in vertical section, $\times 4$; n, sepal of pistillate bud, $\times 4$; o, pistillate bud, sepals removed, $\times 4$; p, petal of pistillate bud, $\times 4$; q, stamines and gynoceum, $\times 4$; r, ovary in cross section, $\times 8$; s, fruit, $\times 2$; t, fruit in vertical section, $\times 2$; u, fruit in cross section, $\times 2$; v, w, x, endocarp in adaxial, abaxial, and lateral views, $\times 2$; y, z, aa, seed in adaxial, abaxial, and lateral views, $\times 2$. From material of Schmid 1615 preserved in liquid.

Veillonia alba H. E. Moore, sp. nov. (Figs. 6, 7).

Caules ad ca. 7 m alti. Folia 3 m longa vel ultra pinnis utrinsecus 44-46. Fructus ovoideus ca. 1.6 cm longus 1.3 cm in diam.

Holotype: Moore, Brinon, Schmid, & Veillon 9959 (BH).

Single-stemmed, unarmed, monoecious palms; trunk to 7 m high or more, 12 cm D.B.H.; green or gray-brown below, white waxy above, somewhat expanded at base, nodal scars prominent, more or less indented, internodes ca. 10 cm long, base sometimes expanded and with a mass of exposed roots.

Leaves about 10, spreading; sheaths tubular, forming a prominent crownshaft,

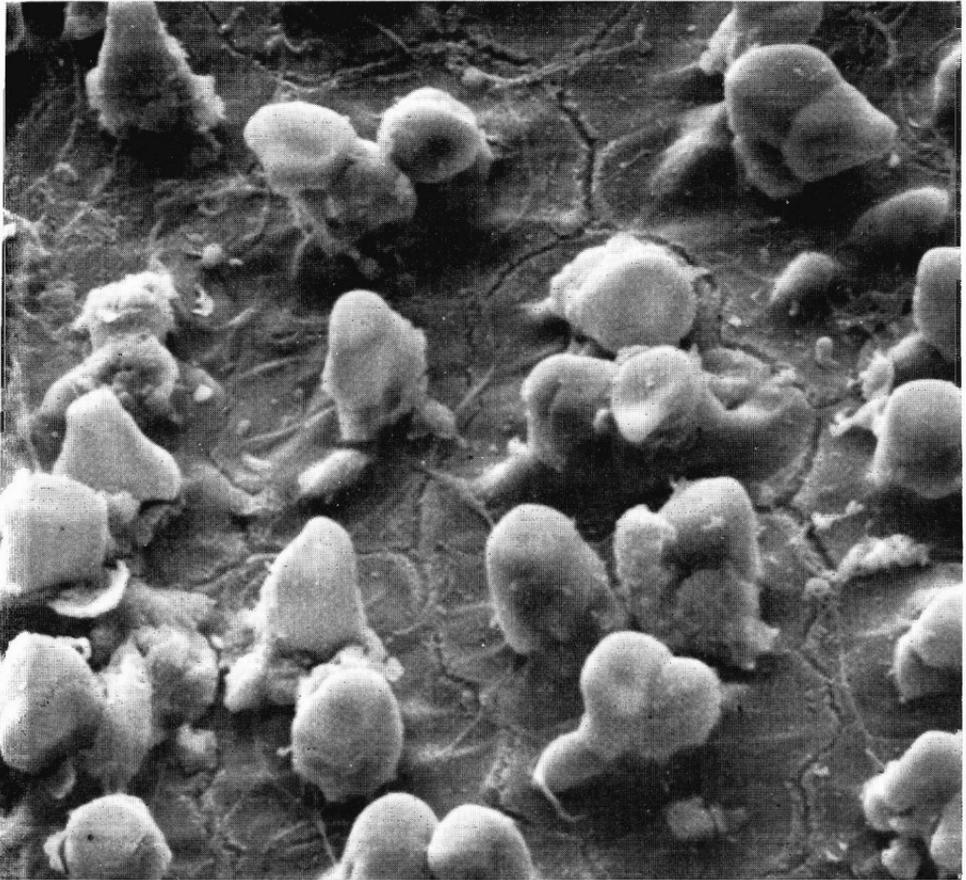
0.67–1.2 m long, white waxy with a dense cover of red-brown or brown floccose scales, occasionally pink within when young, often decurrent on the petiole; petiole green, brown-punctulate, 30–60 cm long, rounded beneath, channeled above; rachis green, ca. 2.8 m long, rounded and brown-lepidote or -punctulate beneath, angled above; pinnae 44–46 on each side, regularly arranged in one plane, acute, acuminate, or the upper very briefly bifid, upper surface green, with more or less prominent midrib and 2 lateral veins, these with scattered small scales, lower surface lepidote with minute, pale-margined, dark-centered scales and with scattered medifixed or basifixed, twisted, brown, membranous ramenta to 8 mm long on the midrib and veins, lower pinnae narrow, 52–80 cm long, 1.2–1.5 cm wide, often continued in a rein, median pinnae 1.05–1.2 m long, 4–6.2 cm wide, apical pinnae 24–38 cm long, 0.5–2 cm wide.

Inflorescences, infrafoliar, one or several, protandrous, densely and minutely white-papillate-puberulent throughout, becoming green in fruit, stiffly spreading at anthesis; major bracts 2, white-waxy, caducous, the prophyll incompletely encircling the peduncle at insertion, ca. 18–25 cm long, often split into two halves, the peduncular bract plump in bud, briefly rostrate, inserted 0.5–2 cm above the prophyll and exceeding it, 15–39 cm long; peduncle short, 5–10 cm long, dorsiventrally compressed; rachis ca. 20 cm long bearing ca. 10 branches the lower ones once-branched into more or less arcuate-pendulous, slightly flexuous rachillae 15–40 cm long or more, 5–7 mm wide basally, upper ones undivided, each branch and rachilla subtended by a rounded or often acute, sometimes conspicuous (to 2.5 cm long) bract.

Flowers sessile, in horizontal triads of two staminate and a pistillate in the lower half of the rachilla or more, paired or solitary staminate distally, each cluster subtended by a prominent, spreading, rounded bract, bracteoles 3, brown the outer low, rounded, the two inner prominent, sepal-like, to ca. 3 mm high; staminate flowers smaller than the pistillate, ca. 3.5 mm long, sepals 3, glabrous broadly imbricate, slightly keeled dorsally, ca. 2.5 mm high; petals 3, valvate symmetrical, ca. 3 mm high and wide, stamens 6, filaments strongly inflexed at the apex in bud, anthers oblong, dorsifixed, bifid at base and apex, dehiscent by lateral slits, the locules lacking a sterile central portion; pistillode longer than the stamens in bud, fluted-columnar, expanded into a rounded apex: pistillate flowers in bud 5–6 mm high; sepals 3, broadly imbricate, rounded, ca. 4 mm high; petals 3, imbricate with briefly valvate apices, ca. 5 mm high; staminodes 3 dentiform, at one side of the gynoecium; gynoecium pseudomonomerous, ovoid with prominent stigmas recurved at anthesis, unilocular, uniovulate, the ovule pendulous, probably hemianatropous.

Pollen (fide G. Thanikaimoni, from *Moore et al.* 9325) monosulcate, never trichotomsulcate, elliptic in polar view; exine finely reticulate; lumina 0.5μ muri 0.5μ ; exine thickness 1.5μ ; tectum perforate 0.5μ thick; columella 0.5μ in height; foot layer 0.5μ thick. $L = 55 (62.75) 73 \mu$; $l = 32 (47.2) 60 \mu$; $h = 35-45 \mu$.

Fruit excentrically ovoid, with stigmatic residue subapical, brown, drying with a pebbled surface, ca. 16 mm long, 12–13 mm in diam.; epicarp minutely papillate, hard, ca. 0.5 mm thick; mesocarp soft, with numerous shining, red, ellipsoid



7. *Veillonia alba*. Stereoscan photograph of fruit surface, $\times 950$, courtesy N. W. Uhl.

tannin cells and a few pale flat fibers; endocarp fragile, ca. 14 mm long, highly sculptured with an adaxial ridge and basal operculum framed by lateral flattish areas and with 2 lateral and 2 abaxial irregular crests and a dorsal groove; seed brown, sculptured as the endocarp, ca. 12 mm long, 7 mm in diam.; endosperm homogeneous; embryo basal.

Specimens examined: NEW CALEDONIA: sur sol gneissique, creek près de Tao, 22 Dec 1951, *M. G. Baumann-Bodenheim 15869* (BH, Z); sur sol gneissique, crête au-dessus de Tao menant vers le Mont Panié, 24 Dec 1951, *M. G. Baumann-Bodenheim 15910* (BH, Z); silva Peala, ad occidentum Puébo, 500–600 m, 6 Apr 1968, *L. Bernardi 12627* (BH, K, Z); Mont Panié, 1965, *L. Lavoix 22* (BH); forêt au-dessus de Balade vers 500 m, 20 Sept 1965, *L. Lavoix 29* (BH, NOU); Puébo, forêt humide sur schistes, crête entre Mandjelia et Salandané, 600 m, 15 Dec 1969, *H. S. MacKee 21288* (NOU, P); in gallery forest along stream in *Melaleuca* savanna, route to Parari from Balade, alt. ca. 350 m, 8 Apr 1964, *H. E. Moore, Jr., R. Baretts, L. Chevalier, & L. Lavoix 9325* (BH, NOU, P); beside Rivière Oua-hina, near home of M. Ford, Colnett, near sea level, 10 Apr 1964, *H. E. Moore, Jr., R. Baretts, L. Chevalier, & L. Lavoix 9331* (BH, NOU, P); wet forest, Roches d'Ouaième, between Hienghène and Tao, alt. ca. 450 m, 21 June 1971, *H. E. Moore, Jr., M. Brinon, M. Schmid, & J.-M. Veillon 9959* (BH holotype; NOU, P isotypes); Mont Panié, low forest at ca. 500 m alt., 29 Sept 1972, *H. E. Moore, Jr., M. Schmid, & J.-M. Veillon 10036* (BH, NOU); commun en forêt sur le versant Est de Mont Panié, vers 300–400 m, 18–19 Sept 1966, *M. Schmid 1615* (BH, NOU);

forêt sur pentes micaschisteuse, Roches d'Ouaième, vers 500 m, 3 Sept 1970, M. Schmid 3405 (BH, NOU).

Veillonia alba is unusual among New Caledonian palms because of the minutely papillate epidermis of the fruit (Figs. 6s, 7). It is most closely related to *Burretio-kentia*, from which it differs in having essentially symmetrical staminate flowers with a columnar pistillode longer than the stamens in bud and expanded into a capitate apex, anther sacs lacking the characteristic sterile connectivelike center of *Burretio-kentia*, and the leaf sheath, upper part of trunk, prophyll, and peduncular bract usually white-waxy. The specific epithet is taken from the last characteristic. The generic name honors M. Jean-Marie Veillon of O.R.S.T.O.M. at Nouméa, a co-collector of the type, whose company in the field has been much enjoyed and whose assistance with palm matters over a period of years is much appreciated.

The genus is apparently restricted to the Panié Massif, where it occurs on gneissic or schistose soils.

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

Palmae monoeciae solitariae. Folia pinnata vaginis tubularibus viridibus. Inflorescentiae infrafoliariae prophyllis pedunculum omnino vaginante pedunculo quam rachidi brevioribus. Flores in triadibus dispositi staminibus floris masculi 32–38 filamentis in alabastro ad apicem erectis vel leviter inflexis antheris dorsifixis pistillodio floris masculi in alabastro trifido quam staminibus brevioribus. Fructus laevis stigmatibus apicali endocarpio inoperculato endospermio homogoneo embryo basali.

Mackeea magnifica H. E. Moore, *sp. nov.* (Figs. 8–10).

Caules ad 25 m alti. Folia ca. 2.5 m longa pinnis utrinsecus 55. Fructus ellipsoideus ca. 2.0–2.2 cm altus 1.1 cm in diam.

Holotype: *MacKee* 26471 (BH).

Single-stemmed, tall, unarmed, monoecious palms; trunk 8–25 m high, ca. 23–25 cm D.B.H., gray or gray-brown, slightly conic-expanded at base, nodal scars prominent but not indented in lower portion, congested above.

Leaves 8–9, spreading; sheaths tubular, forming a crownshaft, 0.83–0.90 (–1.5) m long, not swollen at base, pale to dark green, with gray scales, white to brown within; petiole ca. 20 cm long, ridged centrally and minutely white-scaly above, rounded and appressed-scaly beneath; rachis ca. 2.25 m long, ridged above, flattened beneath, with scales like those of the petiole; pinnae ca. 55 on each side, regularly arranged in one plane, acute, spreading, shining dark green on both sides, somewhat coriaceous, upper surface with elevated midrib, lower surface with many prominent, pale-dotted veins, midrib with brown, membranous, medifixed, lacerate ramenta beneath, lower pinnae ca. 60 cm long, 1–1.5 cm wide, the lowest often prolonged in a rein and to 2.05 m long, median pinnae 74–79 cm long, 2–4.5 cm wide, apical pinnae ca. 27 cm long, 7 mm wide.

Inflorescences infrafoliar, protandrous, spreading, 45–55 cm long, stiffly branched into gray-green or pale green and purple-tinged to brown rachillae;