

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 infrafoliaries prophyllis pedunculum omnino vaginante pedunculo quam rhachidi 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).

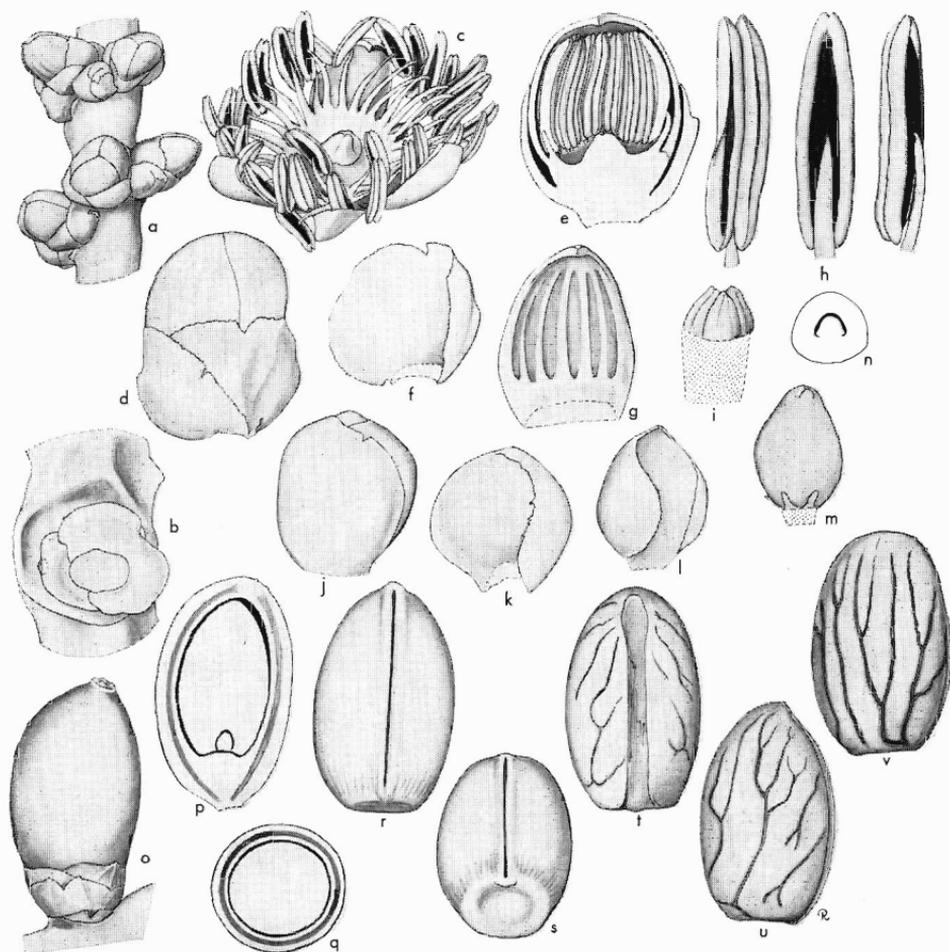
Caules ad 25 m alti. Folia ca. 2.5 m longa pinnis utrinsecus 55. Fructus ellipsoideus ca. 2.0–2.2 cm altus 1.1 cm in diam.

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;



8. *Mackeeea magnifica*. a, portion of rachilla with triads, flowers in bud,  $\times 1\frac{1}{2}$ ; b, triad, flowers removed to show bracteoles surrounding pistillate bud,  $\times 3$ ; c, staminate flower at anthesis,  $\times 3$ ; d, staminate bud,  $\times 4$ ; e, staminate bud in vertical section,  $\times 4$ ; f, sepal of staminate flower,  $\times 4$ ; g, petal of staminate flower, interior view,  $\times 4$ ; h, stamens in three views,  $\times 8$ ; i, pistillode,  $\times 8$ ; j, pistillate bud,  $\times 4$ ; k, sepal of pistillate bud,  $\times 4$ ; l, petal of pistillate bud,  $\times 4$ ; m, staminodes and gynoceium,  $\times 4$ ; n, ovary in cross section,  $\times 4$ ; o, fruit,  $\times 1\frac{1}{2}$ ; p, fruit in vertical section,  $\times 2$ ; q, fruit in cross section,  $\times 2$ ; r, endocarp in lateral view,  $\times 2$ ; s, endocarp in basal view,  $\times 2$ ; t, u, v, seed in adaxial, lateral, and abaxial views,  $\times 2$ . a-n from MacKee 26471, o-v from Moore & Schmid 10054, all preserved in liquid.

peduncle 6.5–9 cm long, gray-green, pale lepidote-tomentose, especially between the major bracts; bracts 2, caducous, the prophyll completely encircling the peduncle, markedly bicarinate but scarcely rostrate apically, 51–55 cm long, lepidote-tomentose, the scales at length more or less deciduous, with brown membranous center and white marginal hairs, the peduncular bract enclosed by the prophyll and with similar scales; rachis 16–17.5 cm long, pale lepidote-tomentose, at length glabrescent, with 15–20 branches, the lower once-branched

or rarely the lowest division forked, with peduncular base 2–4 cm long, rachis 6–6.5 cm long, and 7–8 glabrous rachillae 27–44 cm long, the succeeding branches with fewer rachillae or unbranched; bracts subtending the lower branches reduced to a low ruffled ridge, 2 mm high or less, those subtending rachillae and upper branches acute, to 3 mm long.

Flowers borne in 60–70 spirally arranged triads of two staminate flowers and a pistillate flower nearly to apex of rachillae, the upper few nodes with paired or solitary staminate flowers only; bracts subtending the triads low, rounded ca. 1 mm high, bracteoles subtending the flowers brown, prominent, the two surrounding the pistillate flower unequal, one as high as bract, the other nearly twice as high: staminate flowers brown in bud, white at anthesis, nearly symmetrical, sessile, ca. 6–7 mm long, 5–6 mm wide when dry, slightly wider when fresh; sepals 3, ca. 4 mm high, rounded, keeled toward base, ciliolate on basal lobes; petals 3, spreading at anthesis, strongly fibrous-ribbed when dry, subacute and thickened at apex, ca. 7 mm high, 4.5 mm wide, adnate to receptacle ca. 2 mm; stamens ca. 32–38, the filaments subulate, erect to briefly inflexed at the apex in bud, ca. 2 mm long, slightly shorter than the linear-oblong, dorsifixed anthers, these emarginate to briefly bifid at base and apex, ca. 3 mm long connective dark; pistillode much shorter than stamens, trifid: pistillate bud ca. 4 mm high near anthesis; sepals 3, rounded, ciliolate in bud, broadly imbricate ca. 5 mm high, 7–8 mm wide in fruit; petals 3, broadly imbricate with briefly valvate apices, ca. 6 mm high, 9 mm wide in fruit; staminodes mostly 2–3, dentiform, borne at one side of the gynoecium; gynoecium pseudomonomerous, unilocular, uniovulate, ovule pendulous, arillate, probably hemianatropous.

Pollen (fide G. Thanikaimoni, from *MacKee 26471*) monosulcate, never trichotomosulcate, elliptic in polar view; exine finely reticulate; lumina  $0.5 \mu$ ; mur  $0.5 \mu$ ; exine thickness  $2 \mu$ ; tectum perforate  $0.5 \mu$  thick; columella  $1.0 \mu$  in height foot layer  $0.5 \mu$  thick.  $L = 41 (49.32) 62 \mu$ ;  $l = 22 (31.42) 43 \mu$ ;  $h = 25 (32.11) 36 \mu$

Fruit ellipsoid, with apical stigmatic residue, ca. 22 mm high, 12 mm in diam when fresh, 20 mm high, 11 mm in diam. when dry, dark green with brown perianth; epicarp smooth when fresh, drying minutely pebbled; exocarp thin mesocarp with abundant short sclereids at an angle to the epicarp and external to a heavily tanniferous layer with included flat longitudinal fibers, these adherent to the endocarp only basally; endocarp vitreous, fragile, with longitudinal groove and round basal invagination but not operculate; seed ellipsoid 15–16 mm long, 9 mm in diam., hilum linear, raphe branches descending and anastomosing; endosperm homogeneous; embryo basal.

Germination adjacent-ligular. Eophylls bifid. Leaves of juvenile individual distichously arranged; petioles elongate, ca. 1.3 m long, rounded, red-brown rachis ca. 1.6 m long; pinnae ca. 30 on each side.

Specimens examined: NEW CALEDONIA: Col d'Amos, Haute Mayavetch, restes de forêt humide sur terrain schisteux, 500 m, 27 May 1971, *H. S. MacKee 23803* (P); same locality, 11 Jul 1972, *H. S. MacKee 25692* (BH, P); same locality, 24 Mar 1973, *H. S. MacKee 26471* (BH, holotype P, isotype); same locality, 3 Oct 1972, *H. E. Moore, Jr. & M. Schmid 10054* (BH, NOU, P). Panié Massif, forest between 600 and 700 m alt., east slopes of Mont Panié on trail from Tiaot to summit, 23 June 1971, *H. E. Moore, Jr., M. Brinson, M. Schmid, & J.-M. Veillon 9968* (BH, NOU).



9. *Mackeea magnifica* in the Haute Mayavetch. Photos by M. Schmid.

*Mackeea magnifica* grows with *Cyphophoenix elegans* in the Haute Mayavetch, where there are numerous populations in small residual gallery forests. It is readily distinguished from *Cyphophoenix* by the prophyll, which completely rather than incompletely encircles the peduncle, by the presence of triads of flowers nearly throughout rather than in the basal one-third to one-half of the rachillae, by the unequal rather than nearly equal and sepal-like bracteoles that



10. *Mackeea magnifica*. a, base of trunk; b, infructescence held by Joseph Favier. Photos by M. Schmid.

surround the pistillate flowers, and by the inoperculate endocarp. *Mackeea* is also a larger palm, to 25 m high on Mont Panié, and the leaves are spreading, not arching, with about 55 rather than only 25–27 pinnae on each side.

The relationship of *Mackeea* seems clearly to be with *Actinokentia* Dammer, *Chambeyronia* Vieill., and *Kentiopsis* Brongn. rather than with New Caledonian genera of the *Clinostigma* alliance, from which it differs in its inoperculate endocarp and more numerous stamens. The genus differs from the three above, however, in having fibers of the mesocarp adherent to the somewhat invaginated endocarp only basally. *Mackeea* further differs from *Actinokentia* and *Kentiopsis* in having, among other characteristics, a short, trifid pistillode and a layer of tannin cells in the mesocarp. [*Kentiopsis* was said by Beccari (1920) to lack a pistillode but he noted that the staminate flowers he examined were in a bad state—fresh flowers show an attenuate pistillode nearly as long as the 34–37 stamens in bud.] *Chambeyronia* is further distinct from *Mackeea* in its asymmetrical staminate buds and flowers, lack of a pistillode, and tannin cells dispersed rather than in a distinct layer.

The generic name honors Dr. Hugh S. MacKee and his wife, Margaret E. MacKee, who have collected so widely in New Caledonia and whose interest in the palms has added a wealth of material and notes on them. The epithet *magnifica* is chosen because this appears to be the tallest and stateliest species of palm in New Caledonia.