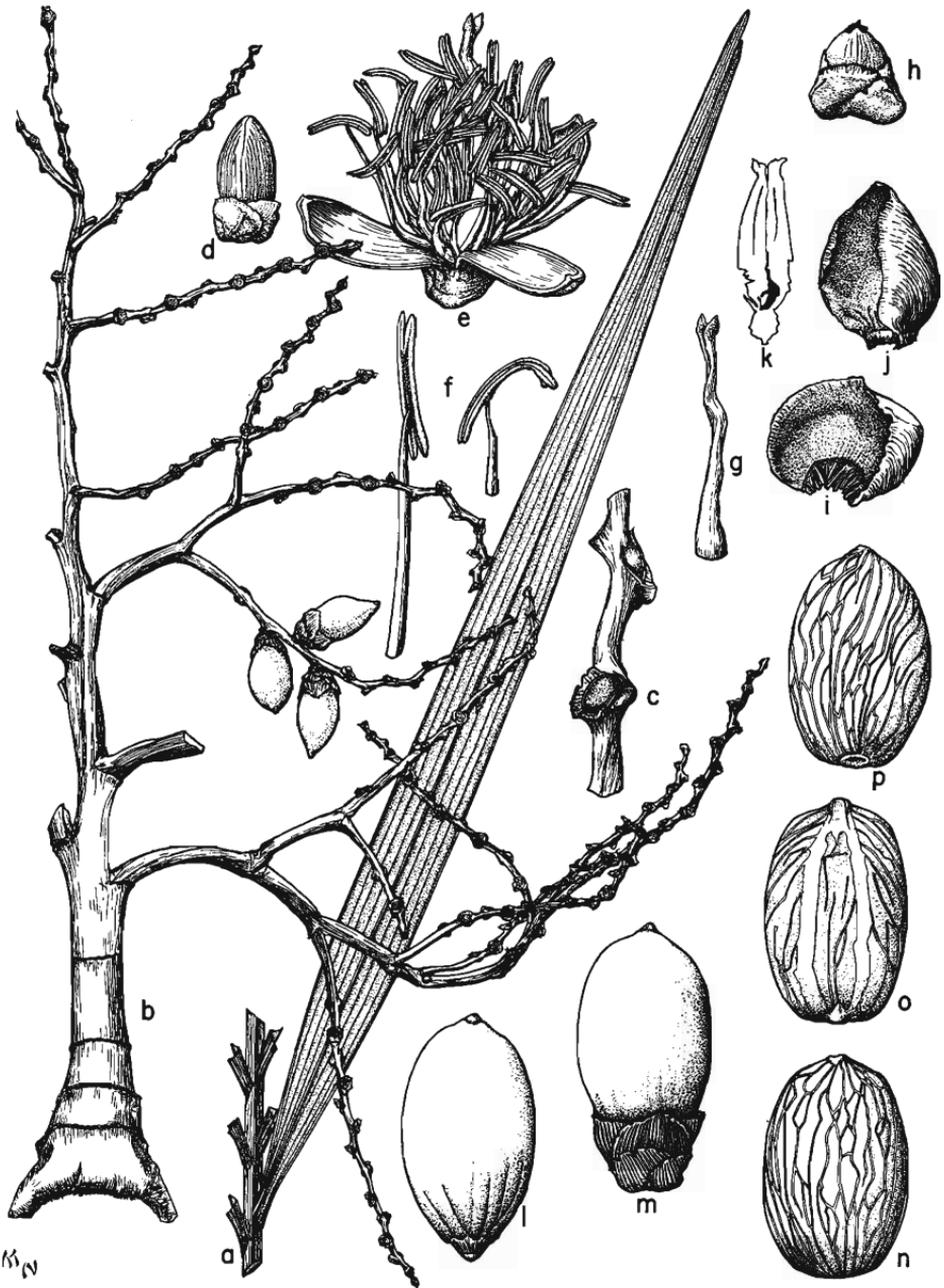


11. Rachillæ short, stiff, divaricate, not exceeding 7 cm. and averaging 2.5 cm. in length with 5-8 flowering nodes: fruit 18-19 mm. long: stamens ca. 28. Kandavu.....9. *V. Smithii*
10. Outermost fibers of the mesocarp short, thickened, and at least partially included in the exocarp which appears pebbled when dry. Vanua Levu.
12. Panicle glabrous at anthesis, at least on the major axes; stamens 30-35: fruit ca. 13 mm. long.....12. *V. pedionoma*
12. Panicle persistently and minutely brown-lepidote at least where protected on the major axes; stamens 40-48: fruit 18-22 cm. long.
13. Pinnæ not widely separated nor reflexed near the base nor (apparently) with persistent loræ on the lowermost; apex of the leaf-rachis lax but not arcuately recurved, the petiole more than 25 cm. long: deltoid apex of petals prominent in fruit.....10. *V. petiolata*
13. Pinnæ widely separated and more or less reflexed or pendulous near the base, the lowermost often with persistent chlorophyllous loræ 1-2 m. long; apex of the leaf-rachis strongly arcuate-recurved: valvate apex of the petals equalled or exceeded in height and much exceeded in width by the lateral margins in fruit.....11. *V. sessilifolia*

† 1. *Veitchia Montgomeryana*, spec. nov. Fig. 141.

Pinnæ foliorum subtus pallido-lepidotæ panicula fere ad nodos omnes flores femineos gerens florum masculinorum stamina 130-140 fructus (3.9-) 4.5-4.6 cm. longus (1.8-) 2.4 cm. in diametro endospermum non ruminatum.

Trunk slender, gray-lepidote becoming brown and striate, with elongate internodes and prominent nodes, to 12 m. or more high, 20 cm. in diameter but often enlarged at the base: leaves 9-10 in a rather stiffly ascending crown above a crownshaft 1-1.25 m. long, the sheaths bright green with a dense indument of gray deciduous-floccose scales having persistent shining-brown appressed-stellate bases and densely vestite with twisted bright and ferruginous to dull and dark brown basifixed chaffy scales at the junction of sheath and petiole; petiole 25-26 cm. long, gray and rounded below, orange-tinged and concave above, at first densely vestite with appressed scales having deciduous white subacicular margins from persistent brown substellate bases, at length becoming merely brown-punctulate on both surfaces but patches of complete scales remaining where not exposed; rachis 2.3-2.6 m. long, at first densely lepidote with appressed scales having a deciduous acicular white margin from a brown stellate base, at length merely densely brown-punctulate except where protected along the margins beneath, elongate twisted chaffy scales present, especially above, when young but frequently not persistent; pinnæ dull dark green, 50-60 on each side of the rachis, stiffish, held nearly horizontally to subpendulous from the rachis and evenly distributed at intervals of 2-4.5 cm. except for a few pairs at the base which are 7.5-10 cm. apart, linear-elliptic in outline, tapering to a very narrow, oblique, 2-toothed, often frayed apex with upper side longest and to a narrow strongly reduplicate base about 2 cm. long on the rachis, the lower margin nearly straight, the upper curving away from the rachis in a wider angle, midrib stout, keeled and about 1 mm. high above, rather prominent below where clothed basally with twisted basifixed or subbasifixed chaffy brown scales to 7 mm. long, these also present on lateral nerves, marginal



141. VEITCHIA MONTGOMERYANA. a, pinna  $\times 1/5$ ; b, panicle  $\times 1/4$ ; c, portion of rachilla showing bracteoles and flower scars  $\times 1$ ; d, staminate bud  $\times 1$ ; e, staminate flower expanded  $\times 2$ ; f, stamens fresh and dried  $\times 3$ ; g, pistillode  $\times 2$ ; h, pistillate flower at anthesis  $\times 1$ ; i, j, sepal and petal of pistillate flower  $\times 2$ ; k, pistil in vertical section  $\times 2$ ; l, m, fruit  $\times 2/3$ ; n-p, seed, n, antirapheal, o, rapheal, p, lateral views  $\times 1$ : a, d, e, g, from Furtado 30930, remainder from Moore 6816, 7056.

nerves thickened and densely brown-punctulate, the remaining nerve of two or more orders, 1-2 of these on each side of the midrib stouter than the numerous tertiary and quaternary nerves, upper surface of pinnae glabrous, lower densely lepidote with minute, persistent, pale, brown-centered scales, lowermost pinnæ to 50 cm. long, 2.6 cm. wide, acute to attenuate with remains of loræ sometimes to 1 m. long, median pinnæ to 80 cm. long, 5.5-7 cm. wide, subapical pinnæ to 52 cm. long, 2.5 cm. wide, apical to 32 cm. long, 1.5 cm. wide: panicle to 60 cm. long, 80 cm. wide, stout, stiff, pale, sharply angled, glabrous or essentially so at anthesis but minutely brown-punctulate or -lepidote especially on the primary axes, suberect at anthesis then spreading and bearing about 15 branches laterally and ventrally, the lower 4-5 once-branched or rarely twice-branched through forking of rachillæ, the remainder unbranched, the ultimate rachillæ 13-25 cm. long, abruptly narrowed to a slender point supporting a ♂ flower, bearing flowers in triads of ♂ ♀ ♂ throughout or nearly throughout but where the ♀ aborted then the ♂ paired; peduncle 15 cm. long, narrow and thick at the base, outer bract inserted ca. 3.5 cm. above base, inner at an interval of 2 cm. with scars of 2-3 incomplete bracts above, the rachis to 50 cm. long; staminate flowers glabrous, ca. 1.3 mm. long, 7 mm. in diameter, the sepals 5 mm. high, minutely ciliate on lower margins, pale margined, petals rather prominently striate when dry, stamens 130-140, the filaments united basally and adnate to the petals for ca. 2 mm., then distinct, ca. 4 mm. long, shorter than the narrowly linear apically and basally bifid anthers; pistillate flowers subglobose, 10 mm. high, 10 mm. in diameter, sepals 6-7 mm. high, pale margined, petals ca. 8 mm. high, strongly striate when dry, very shortly valvate-umbonate at apex, pistil narrowly ovoid, 8 mm. high, the short soft ovarian portion capped with a thickened style and 3 short divergent stigmas: fruit oblong-obovate, (3.9-) 4.5-4.6 cm. long, (1.8-) 2.4 cm. in diameter, gradually tapered to the base where subtended by an indurately closely cupular perianth of strongly striate petals 1.4 cm. long, and sepal 7 mm. long, broadest at or above the middle and abruptly narrowed to a short stylar cap 2 mm. long, exocarp smooth, red when mature, mesocarp ca. 1 mm. thick, endocarp thin, fragile and more or less adherent to the oblong-ellipsoid seed which is rounded with a very short point at the apex, (2.4-) 2.8 cm. long, (1.3-) 1.8 cm. in diameter, with coarse vascular strands descending from the raphe and loosely anastomosed, endosperm homogeneous.

Cultivated. United States: Florida; Montgomery collection, Coconut Grove, February, 1954, *Moore 6816* (BH syntype), February 26 1955, *7056* (BH syntype), March, 1957, *7481* (BH paratype) Fairchild Tropical Garden, Coconut Grove, March, 1957, *Moore 7441, 7446* (BH). Indonesia: Java; Buitenzorg as Gardens no. XIII.A.22, April-May, 1936, *C. X. Furtado Singapore Field Number 30930* (A, BH, BRI, L).

Plants of *Veitchia Montgomeryana* have been cultivated for many years under the name *V. Joannis* in various botanical gardens and private collections. The first records I have seen are specimens collected at the

Botanical Garden, Bogor [Buitenzorg], by Furtado who noted that the catalogue of the garden originally listed them as from the Congo. Origin of the species is unknown but is surely not African. It is more likely that the species may eventually be found native in the New Hebrides where other species similar in pinnæ, panicles, and fruit are known to occur. It is also possible that *V. Montgomeryana* may prove identical with the as yet incompletely known *V. Metiti*, yet present evidence leads me to consider it distinct. The latter appears to have pistillate flowers restricted to the lowermost nodes of shorter and much more strongly flexuous rachillæ. Fruit is nearly identical in size but the seed of *V. Metiti* has been damaged so that comparison is difficult. I had at first thought that *V. Montgomeryana* might be identical with *V. Hookeriana*. Examination of the fragmentary type kindly loaned by the Director of the Royal Botanic Gardens at Kew convinces me that they are distinct. The panicle of *V. Hookeriana* is much stiffer, appears also to have pistillate flowers restricted to the lowermost nodes, and the vascularization and shape of the seed are distinctive. *V. spiralis* differs in size, shape, and vascularization of seed, *Kajewskia* in the panicle and staminate flowers, *V. subglobosa* in size and shape of fruit.

Among species definitely and adequately known from the wild state, *Veitchia Macdanielsii* and *V. Winin* appear most closely related to *V. Montgomeryana*. These share the prominently pale lepidote pinnæ, the stout panicle bearing pistillate flowers nearly throughout, and the coarse vascular pattern of an oblong-ellipsoid seed. *Veitchia Winin* is amply distinct in its few stamens and small fruit; *V. Macdanielsii* approaches more closely but has smaller fruit and fewer stamens.

There should be no difficulty in distinguishing *Veitchia Montgomeryana* from *V. Joannis* in cultivation even in the vegetative state. Leaves of *V. Joannis* are borne nearly horizontally. The pinnæ are distinctly pendulous and are not pale lepidote below. Seedlings are distinctive. The first leaves are bifid with the rachis half as long to equalling the upper margin of each segment. Apices of these segments are broad and bluntly toothed. The sheath is greenish under a light cover of soft pale hairs intermixed with chaffy scales, the dark red-brown petiole is densely chaffy with spreading scales. Segments are green throughout with no orange coloring along the upper side of the chaffy green rachis which is similar to the petiole in color and scales below. *Veitchia Montgomeryana*, on the other hand, has rather stiffly ascending-arcuate leaves with pinnæ held rather stiffly from the rachis at first, dropping toward the tips. The lower surface is densely and minutely pale lepidote. Leaves of seedlings are deeply bifid at the apex, the upper margin of the segments being more than twice as long as the rachis, and the narrowed apex is sharply toothed. The sheath is reddish with floccose scales, the petiole green or tinged

with pink or orange and blotched with massed appressed gray scale these seldom loose and chaffy. Segments are orange where attached the orangish rachis which is blotched below. Although petioles of older seedling leaves become nearly mahogany-colored, they are still distinguishable by the blotches of gray scales. The minute lepidotes on the lower surface of the leaves are not obvious until the fourth or fifth leaf appears.

I have chosen as type for this species two collections taken from one of five trees grown from seed from Singapore Botanic Garden in the palmetto collection of the late Colonel Robert H. Montgomery whose name richly deserves to be associated with a member of the family. His own collection and his interest in the Fairchild Tropical Garden have stimulated others to grow palms and have provided the means for much effective botanical study. Other trees are now at the Fairchild Tropical Garden and seedlings have been distributed from there in the past two years. The species seems particularly well adapted to Florida conditions. Plants growing in the garden of Mr. and Mrs. F. V. Crane at Marathon on Key Vaca have demonstrated their ability to withstand sun, wind, and salt spray that have done considerable damage to such related genera as *Ptychosperma*. As an ornamental subject for suitable regions, *V. Montgomeryana* should receive far wider attention.

Occasional depauperate panicles appear on old or weak trees. There is some variation in fruit and seed perhaps associated with the foregoing. That illustrated in Fig. 141 is probably normal, the fruit measuring 4 cm. long, 2.4 cm. in diameter, the seed 2.8 cm. long, 1.8 cm. in diameter. Other mature fruits from a second tree in the Montgomery collection measure 3.9-4.1 cm. long, 1.8-2.0 cm. in diameter with seed 2.4 cm. long, 1.3 cm. in diameter. Fruit of the Furtado collection is immature and intermediate between the above two. A single weathered fruit from the Botanic Gardens, Rabaul, without data in the herbarium at Brisbane measures 4.5 cm. long, 2.2 cm. in diameter and may belong here as may specimens with immature fruit collected in cultivation at Alofi on Niue Island by T. G. Yuncker (10141 UC, US, 10179 BH) and cited as *V. Joannis* in The Flora of Niue Island (Bernice P. Bishop Mus. Bull. 178: 27, 1943).

† 2. *Veitchia Macdanielsii*, spec. nov. Figs. 140, 142.

Pinnae foliorum subtus pallido-lepidotæ panicula fere ad nodos omnes flores femineos gerens florum masculorum stamina ca. 100 fructus 3.3-3.5 cm. longus 1.7-1.9 cm. in diametro endospermum non ruminatum.

Trunk smooth, 25 m. high, 3 dm. base diameter, 1.5 dm. diameter at top; leaves 4 m. long; sheath ca. 1 m. long, densely pale lepidote-tomentose