

narrowly ellipsoid, tapered to the base and the very shortly umbonate apex, the perianth 6.5-7 mm. high, scarcely crenulate, membranous-margined, the petals with a conspicuous triangular apex; exocarp closely adherent to (and partially including ?) an underlying layer of short thickened fibers 0.5-1 mm. long, when dry appearing pebbled, seed not completely developed, rounded at the apex, endosperm homogeneous.

Fiji Islands: Vanua Levu; Mbua, southern slope of Mount Seatura, alt. 500 m., April 27-28, 1934, *A. C. Smith 1687* (NY, type, GH, UC, US, isotypes).

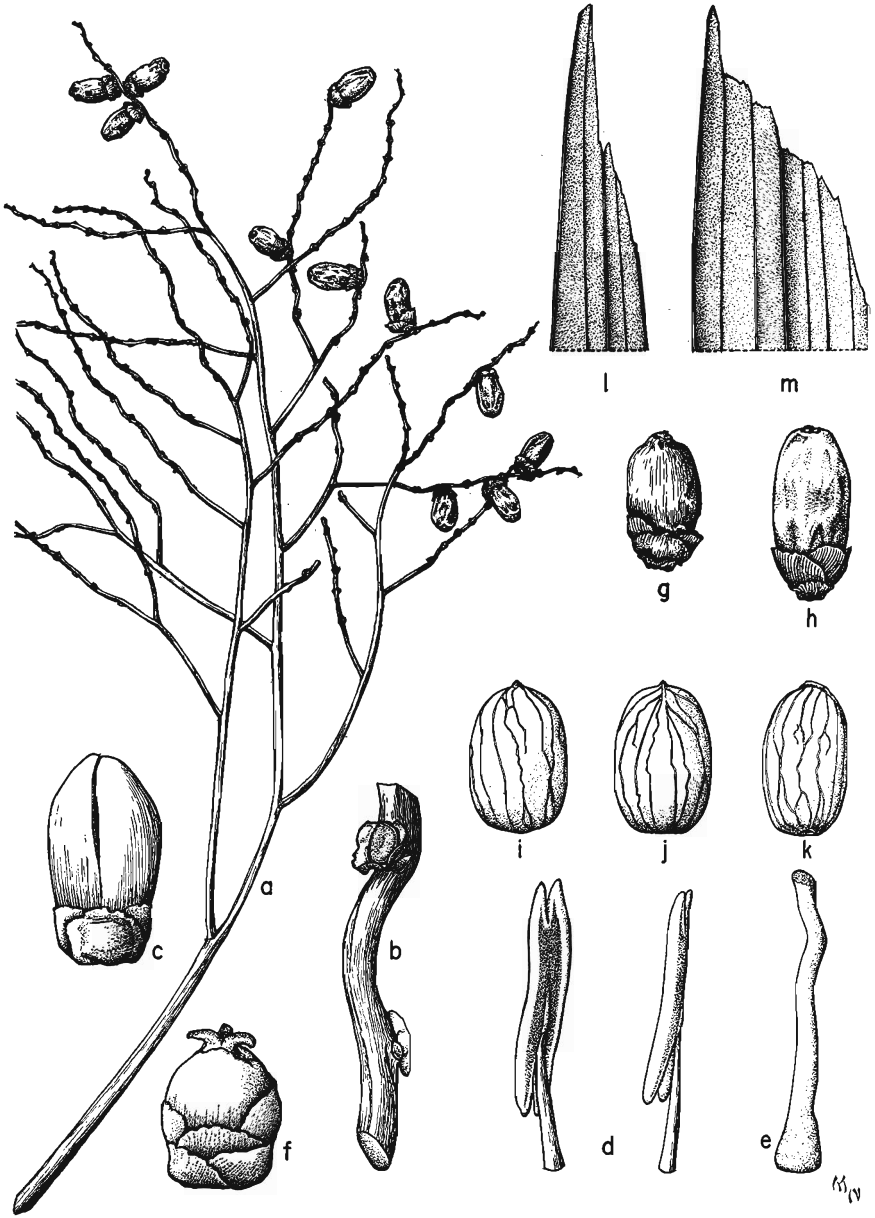
The closely placed pinnæ of *Veitchia petiolata* are more like those of *V. Joannis* than those of *V. filifera* and *V. sessilifolia*. Added differences in the fruit attest to the validity of the taxon. Although fruit from the type was forwarded to Florida with that of *V. sessilifolia*, I have seen no plants in cultivation, doubtless due to incomplete maturity of the seeds.

Burret used the spreading calyx of staminate flowers as an additional character. When flowers are boiled for dissection, this distinction disappears as the sepals assume the normal erect position. A similar circumstance is found in *V. sessilifolia* and is probably attributable to the immature stage in which they were collected.

† 11. ***Veitchia sessilifolia***, (Burret) trans. nov. Fig. 151.

*Vitiphœnix sessilifolia*, Burret, in Bernice P. Bishop Mus. Occ. Papers, 11 (4), 9 (1935).

Trunk to 10 m. high, 11 cm. in diameter, in cultivated specimens narrowed and then abruptly thickened toward the base: leaves 6-7, erect or ascending with strongly arcuate tips, the sheath ca. 50 cm. long, 12.5 cm. in diameter, closed but soon splitting opposite the petiole, deep green with white floccose-lepidote indument outside, yellow and smooth inside; petiole 10-26 or more cm. long, to 5 cm. wide and 3 cm. thick at the base, rounded and densely canescent below with interlocking appressed acicular-margined lepidotes, at length becoming densely brown-punctate, canescent to glabrescent above and with castaneous twisted basifixed scales especially near the acute margins above, the rachis to 3.3 m. long, green above, rounded and gray-lepidote-tomentose when young becoming dark brown furfuraceous or brown-punctate in age below; pinnæ 46-47 on each side of the rachis borne in a single plane and regularly alternate to subopposite or the median occasionally paired, coarse, coriaceous, narrowed at the base, broadest at the middle, the apex obliquely acute to truncate, the midnerve and marginal nerves prominent on both surfaces, secondary nerves several and inconspicuous, deep green, glabrous and glossy above, glabrous and dull below except for brownish- or grayish-lepidote or -punctate marginal nerves and pale brown or grayish slender, twisted, basifixed, more or less deciduous, filiform to oblanceolate-linear scales to 9 mm. long on the midrib near the base and occasionally densely and minutely brown-lepidote on the surface about the very base, the lowermost pinnæ



151. *VEITCHIA SESSLIFOLIA*. a, portion of panicle in fruit  $\times 1/3$ ; b, portion of rachilla with bracteoles and flower-scars  $\times 3$ ; c, staminate flower  $\times 3$ ; d, stamens  $\times 6$ ; e, pistillode  $\times 6$ ; f, pistillate flower at anthesis  $\times 3$ ; g, h, fruits  $\times 1$ ; i-k, seed, i, antirapheal, j, rapheal, k, lateral views  $\times 2$ ; l, m, tips of pinnae  $\times 1$ : a-f, l from Moore 6087, g, m, from Degener and Ordonez 14074, h-k from Smith 1784.

to 1 m. long, 5 cm. wide, often with persistent chlorophyllous loræ from the tip, the lower separated at intervals of 10-15-23 cm. and more or less reflexed, to 82 cm. long, 5.8 cm. wide, narrowed to 1.5 cm. at insertion on the rachis, the median pinnæ 1.5-6 cm. apart, to 82 cm. long, 5.5 cm. wide, 1-1.5 cm. at insertion, directed forward, subapical pinnæ similar but smaller, the terminal pinnæ ca. 32 cm. long, 2-3 cm. wide, truncate and toothed at the apex, 3-5-nerved: panicles often several at successive nodes below the crownshaft, ca. 1.1 m. long, 3-4 times branched, subtended by 2 caducous ancipitous pergamentaceous densely and minutely lepidote bracts, lepidote-tomentose, especially on the major axes, when young when densely vestite with deciduous dark-brown-based pale plumose scales and persistent or subsistent small basifixed castaneous scales, these remaining where protected even on the fruiting panicle, the peduncle straight, 15-26 cm. long, the lowest branch 1 m. long with 5-6 primary branches, these again twice- or thrice-branched, the nearly straight ultimate rachillæ 5-16 cm. long with 5-17 flowering nodes becoming distichous toward the apex, pale and minutely furfuraceous with acicular or twisted dark scales or glabrate, the terminal 10 branches smaller, once-branched or unbranched, 11-23 cm. long; staminate flowers creamy-white, 9 mm. long, 5 mm. in diameter at maturity, the calyx 3 mm. wide at the base, the margin irregularly crenulate and brown-membranous, petals 8 mm. long, 4 mm. wide, stamens 40-48, with subulate filaments about half as long as the anthers, these 5 mm. long, sagittate at the base, bifid at the apex; pistillate flowers 6.5 mm. high, 4.5 mm. in diameter at maturity subtended by prominent bracteoles, the sepals similar to those of staminate flowers but less strongly thickened at the base, petals 5 mm. high, 5 mm. wide, broadly ovate with very short valvate triangular apex 0.75 mm. long, staminodes apparently 6 but variously united into 3, pistil ovoid, ca. 5 mm. high, 3.25 mm. in diameter: fruit 18-22 mm. long, 8-11 mm. in diameter, oblong-ellipsoid, rather abruptly narrowed at the base and again to a low broad styler cap, subtended by a rather closely sheathing light brown perianth with petals 7 mm. long, 10 mm. wide, the triangular apex of these short, exceeded in height and breadth by the adjacent margins, sepals 2 mm. long, glabrous with brown-membranous irregularly dentate upper margin and minutely ciliate lateral margins, 8 mm. across, the staminodes in an irregular ring, thin exocarp adherent to underlying shortened and somewhat thickened fibers ca. 1 mm. long and appearing pebbled or lineolate when dry, mesocarp ca. 1.5 mm. thick, endocarp crustaceous, thin, fragile, the seed ovoid, produced in a short point, 10 mm. long, 7 mm. in diameter, vascular strands descending in parallel from near the apex of the raphe and little anastomosed except at the base near the embryo, endosperm homogeneous.

Fiji Islands: Vanua Levu; Thakaundrove, Yanawai River region, Mount Kasi, 300-430 m. alt., May 10-11, 1934, *A. C. Smith 1784* (NY, type, GH, UC, US, isotypes); eastern drainage of Yanawai River, ca. 120 m. alt., January 12, 1941, *Degener & Ordóñez 14074* (A, MO, NY, UC, US).

Cultivated. Cuba; Atkins Garden and Research Laboratory of Harvard University, Soledad, Cienfuegos, February 22, 1952, *Moore 6087*

(BH) and February 25, 1955, 6087 bis (BH, US). United States Florida; Montgomery Palmetum, Coconut Grove, March, 1957. Moore 7448 (BH).

Seed from the type of *Veitchia sessilifolia* was forwarded to the late Colonel Robert Montgomery in Coconut Grove, Florida, by the collector in 1934. Some of it was shared with the Atkins Garden in Soledad, Cuba, where a tree flowering at a height of 2 meters was observed in 1952 and again in 1955. Another tree at the Montgomery Palmetum has not yet commenced to flower.

It is instructive to compare trees in cultivation with the type specimens. The progeny do not differ in essential qualities of habit, general proportions of foliage and panicle, indument, flowers, or fruit, but notable differences can be observed in size of leaves, toothing of the leaf apex and in panicles. The type is not complete but median pinnæ are about 50 cm. long, 5 cm. wide. Pinnæ from a comparable region in cultivated trees are slightly more than 80 cm. long, 5.5 cm. wide, and distinctly acute. Lower pinnæ are separated by 11-23 cm. on the stout rachis; those of the type are inserted 10-11 cm. apart. Burret applied the epithet *sessilifolia* because of the extremely short petiole but in cultivated plants this may be as much as 10 cm. long. The panicle also appears to be much more robust in cultivation with ultimate rachillæ 7.5-15 cm. long with 10-17 flowering nodes as opposed to rachillæ 5-9 cm. long with 7-11 flowering nodes in the type.

Emphasis has been placed on the size of parts in separating species of this complex heretofore. On that basis, the specimen collected by Degener and Ordonez would merit distinction because of the long slender petiole to 26 cm. long or more, the elongate peduncle 24-26 cm. long. I do not consider these adequate specific differences in view of the pronounced similarity in indument, flowers, and particularly in fruit. The broad rather than nearly acute tips of the pinnæ are strikingly like those of *Veitchia vitiensis* and *V. Smithii*. It is significant that a sterile tree grown at the Montgomery collection from seed of the type is similarly marked by broad apices of the pinnæ. The determining factor is unknown but it is obvious that the difference cannot be relied on for distinction within the species.

† 12. *Veitchia pedionoma*, (A. C. Smith) trans. nov. Figs. 150C, 152.

*Vitiphœnix pedionoma*, A. C. Smith, in Journ. Arnold Arb. xxxi, 145 (1950).

Stems to 10 m. high, 20 cm. in diameter: leaves ca. 4 m. long, the sheath elongate, petiole and rachis at first pale lepidote, then merely