

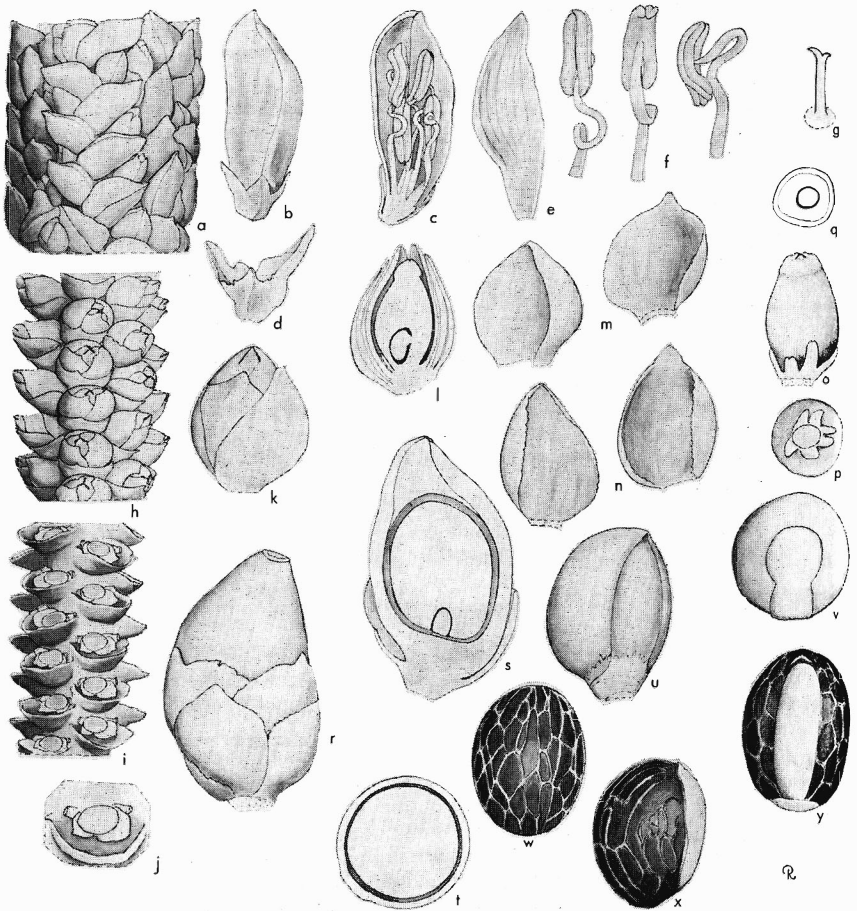
4. Stamens exerted at anthesis; pistillode minutely trifid: seed with homogeneous endosperm: trunk spineless; pinnae with very long black bristles or spines on midrib above toward the base: bracts of inflorescence thin, sparsely to densely hairy. Mascarene Islands. *Acanthophoenix*
4. Stamens included at anthesis; pistillode deeply trifid: seed with ruminant endosperm: trunk usually armed with rings of stout spines: pinnae lacking bristles or spines on midrib above: bracts of inflorescence thickish, spiny. Ceylon to Borneo and Sumatra. *Oncosperma*
1. Leaves with blades undivided laterally or irregularly divided into pinnae of varying width, these with mostly more than 1 principal rib and acute, bifid, or toothed at the apex, or the undivided blade toothed along the margin; sheaths open, not forming a prominent crownshaft: inflorescences interfoliar or at length becoming infrafoliar; peduncular bract inserted at some distance above the prophyll and much exceeding it, caducous, the prophyll dorsiventrally flattened, markedly ancipitous, open apically, persistent; peduncle elongate, usually exceeding the rachis; rachillae straight in bud: staminate flowers symmetrical or asymmetrical; sepals usually rounded and markedly imbricate, broader than high: seed with ruminant endosperm.
5. Staminate flowers with petals about twice as long as sepals; stamens 6; pistillode large, truncate, 3-angled and -lobed, about as high as the petals: pinnae with toothed apices, the veins parallel throughout.
6. Fruit large, 2.0-2.5 cm in diam.; endocarp conspicuously ridged and crested; seed more or less ridged and with anastomosing raphe branches: leaf blade almost appearing undivided, the pinnae scarcely disjunct. Seychelles. *Verschaffeltia*
6. Fruit small, 5 mm in diam. or less; endocarp not ridged; seed not ridged, the raphe branches few, ascending: pinnae clearly separated along the rachis. Seychelles. *Roscheria*
5. Staminate flowers with petals about 4 times as long as the sepals; stamens numerous (18 or more); pistillode neither truncate nor angled nor lobed but sometimes minutely trifid: pinnae acute to acuminate or incised-bifid, the veins convergent at apex.
7. Fruit ovoid: staminate flowers asymmetrical; stamens ca. 18, the filaments tapered to their attachment and the anthers more or less versatile; pistillode small, slender: leaf blade usually undivided, though incised marginally and the lobes bifid: inflorescence twice-branched. Seychelles. *Phoenicophorium*
7. Fruit subglobose: staminate flowers symmetrical with subnavicular petals; stamens 40-50, the filaments expanded at the point of attachment, anthers scarcely versatile; pistillode ovoid, minutely trifid: leaf blade pinnate with separated, mostly 2-3-ribbed, acute to acuminate pinnae: inflorescence simply branched. Seychelles. *Nephrosperma*

TECTIPHIALA H. E. Moore, gen. nov.

Palmae monoeciae dense spinosae cespitosae vel solitariae. Folia pinnata vaginis tubularibus spinosis pinnis unicostatis fasciculatis. Inflorescentiae infrafoliares vel interfoliares simpliciter ramosae prophylo et bractea pedunculi proxime insertis. Flores in triadibus dispositi bracteis triadum prominentibus per alabastros masculos celatis staminibus floris masculi 6 (-7) filamentis in alabastro plus minusve torsivis ad apicem erectis antheris dorsifixis. Fructus ovoideus laevis stigmate apicali endocarpio operculato endospermio homoganeo embryone basali.

Tectiphiala ferox H. E. Moore, sp. nov. (Figs. 1-4).

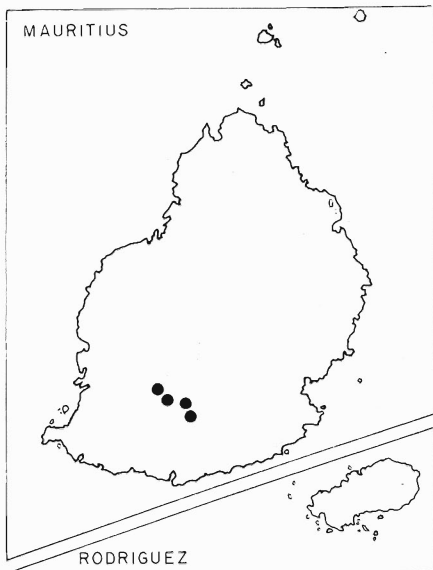
Caules ad 2 m alti. Folia ca. 2.5 m longa pinnis utrinsecus 60 2-7-fasciculatis. Rachillae ca. 5. Fructus ovoideus ca. 1.3 cm altus 0.7 cm in diam.



1. *Tectiphiala ferox*. a, portion of rachilla in staminate bud, $\times 1\frac{1}{2}$; b, staminate bud, $\times 3$; c, staminate bud in vertical section, $\times 3$; d, calyx of staminate flower, $\times 5$; e, petal of staminate flower, external view, $\times 3$; f, stamens in three views, $\times 4$; g, pistillode, $\times 5$; h, portion of rachilla in pistillate bud, $\times 1\frac{1}{2}$; i, portion of rachilla with flowers removed to show prominent bracts subtending triads, $\times 1\frac{1}{2}$; j, triad with flowers removed to show bracteoles and pedicels of staminate flowers, $\times 3$; k, pistillate bud, $\times 3$; l, pistillate bud in vertical section, $\times 3$; m, sepal of pistillate flower in two views, $\times 3$; n, petal of pistillate flower in two views, $\times 3$; o, staminodes and gynoeceium, $\times 3$; p, staminodes at base of ovary, $\times 3$; q, ovary in cross section, $\times 3$; r, fruit, $\times 3$; s, fruit in vertical section, $\times 3$; t, fruit in cross section, $\times 3$; u, endocarp in three-quarters view, $\times 3$; v, endocarp basal view to show operculum, $\times 3$; w, x, y, seed in adaxial, lateral, and abaxial views, $\times 3$. From material of Moore, Guého & Vaughan 9925 preserved in liquid.

Holotype: Moore, Guého, & Vaughan 9925 (BH).

Solitary or caespitose with mostly two stems, one larger than the other; stems ca. 1 m high, 15 cm in diam., clothed at the base with old leaf stubs, younger growth closely ringed and brown-ridged, with stiff, gray-bulbous-based, gray-black spines to ca. 18 cm long.



2. A solitary individual of *Tectiphiala ferox* at Crown Land Declerc with pinnae appearing almost regularly arranged, Mr. Marc d'Unienville at left. Photo courtesy R. E. Vaughan (Vaughan 12580A). Distribution of *Tectiphiala* at right.



3. A caespitose *Tectiphiala ferox* at the type locality with pinnae markedly grouped and in several planes, J. Guého for scale.



4. *Tectiphiala ferox* (Moore et al. 9925). a, leaf sheaths, unopened inflorescence, and part of trunk; b, inflorescence with most flowers fallen.

Leaves about 10, spreading; sheath ca. 8 dm long, with a lateral blunt ligule apically and long spines similar to those of the stem basally, otherwise dark-brown-hairy with intermixed flat, often crimped, blackish spines; petiole short, ca. 2 dm long, brown-hairy beneath, with erect short spines on the upper surface; rachis ca. 1.25 m long, hairy on upper surface to near the middle; pinnae ca. 60 on each side, 1-ribbed, acute, borne in groups of 2-7 and in several planes but sometimes so close as to appear regularly arranged, shining green with prominent midrib above, grayish beneath with a dense cover of pale-margined, brown-centered, membranous scales, rameta, when present, dull brown, basal pinnae ca. 22 cm long, 8 mm wide, median pinnae ca. 58 cm long, 6 cm wide, apical pinnae ca. 33 cm long, 1.2 cm wide.

Inflorescences infraxillary or in axils of falling leaves, protandrous, erect in bud; prophyll 28-31 cm long, brown-hairy and black-spiny, enclosing a similarly hairy but less spiny peduncular bract, completely encircling the peduncle, both bracts inserted at the base of the short, densely spiny peduncle, the spines crimped, brown-black, ca. 7.5 cm long; rachis scarcely evident; rachillae 3-5, congested at apex of peduncle, 12-23 cm long, straight or only flexuous apically in bud, flattened and spiny at base.

Flowers borne in triads of 2 staminate and a pistillate in about 6 vertical rows nearly throughout the rachillae, paired or solitary staminate distally; bracts subtending the triads prominent, approximate, projecting, saucerlike, rounded, green, covered in bud by overlapping staminate flowers, bracteoles surrounding the pistillate flower unequal, one much larger than the other: staminate flowers

orange-yellow in bud, asymmetrical, acute, very briefly pedicellate, the pedicels flat; sepals 3, often unequal, acute, 2–3.5 mm long, briefly connate basally; petals 3, strongly nerved when dry, angled, acute, 6–9 mm long; stamens 6 (–7), equalling the petals in bud and perhaps exceeding them at anthesis, filaments nearly cylindrical, stout, more or less twisted or coiled, erect at the apex, anthers yellow, dorsifixed, briefly bifid at apex, deeply bifid at base, laterally dehiscent by longitudinal slits; pistillode usually apparent, half as long as the stamens, irregularly expanded, trifid, or oblique: pistillate buds more or less obscured by the staminate buds, ca. 6 mm long, green; sepals 3, broadly imbricate, more or less acute, ca. 5 mm long; petals 3, broadly imbricate with briefly valvate apices, scarcely exceeding the sepals; staminodes 6 (–7), small, dentiform or linear; gynoecium pseudomonomerous, ovoid, with stigmas not prominent, unilocular, uniovulate, ovule large, pendulous, probably hemianatropous.

Pollen (fide M. A. Sowumni) monosculcate; polar axis 37.6 μ , longer equatorial diameter 47 μ , shorter equatorial diameter 41 μ ; amb elliptical to nearly circular, bilaterally symmetrical to asymmetrical, heteropolar; sulcus large, rounded at ends, 35.2 μ long, 20.8 μ wide, often faintly delimited; exine 1.8 μ thick, comprising a rather thin tectum and baculate layers and a comparatively thick foot layer; sexine reticulate to scrobiculate, reticulation distinct or faint, bacules arranged along edges of muri.

Fruit ovoid, with terminal stigmatic residue, dark blue-black and scented like ripe blueberries (*Vaccinium corymbosum* L.) fide D. H. Lorence, ca. 11 mm long, 6 mm in diam.; epicarp smooth, underlain by longitudinal sclereids over a layer of tannin cells; endocarp thin, brown, with round basal operculum; seed adherent by the elongate elliptical hilum; raphe branches anastomosed; endosperm homogeneous; embryo basal.

Vernacular name: *palmiste bouclé*, derived from *cheveux bouclés* (curly hair) in reference to the arrangement of pinnae.

Distribution: endemic to Mauritius in mostly wet, more or less acid situations at elevations of ca. 570–650 m.

Specimens examined: MAURITIUS: in marshy place among planted pines by side of road to Macabé, Petrin Nature Reserve, ca. 650 m alt., 19 April 1971, H. E. Moore, Jr., L. J. Guého, & R. E. Vaughan 9925 (BH, holotype: MAU, isotype); Crown Land Declerc, 1969, R. E. Vaughan 12580 (BH, MAU).

Tectiphiala is now known from a total of about 28 individuals in rather wet areas at the two localities cited, at Crown Land Florin in the neighborhood of Mare Longue, and in a limited area by a small cascade at Bois Sec. The populations at Crown Land Declerc and Bois Sec are now in reserves, thanks to the action of Mr. A. W. Owadally, Conservator of Forests. Despite the limited number of individuals and restricted distribution, this is probably the most abundant arecoid palm in the wild state on Mauritius next to a recently discovered population of *Hyophorbe vaughanii*. Flowering and fruiting are sporadic, according to D. H. Lorence, who obtained 30 percent germination of seeds after six months.

Pollen of *Tectiphiala* has been studied by Drs. Erdtman, Sowunmi, and Thanikaimoni, all of whom indicated that it was unlike pollen of the *Oncosperma* type. According to Thanikaimoni, nearly 18 percent of the grains are sterile. Resem-

blances to pollen of *Jessenia* and *Scheelea* have been noted but the morphology of the genus is clearly that of an oncospermate palms.

ACKNOWLEDGMENTS

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LITERATURE CITED

- MOORE, H. E., JR. 1973. The major groups of palms and their distribution. *Gentes Herb.* 11: 27-141.