

# *Dypsis leucomalla*, a New Species Described from Cultivation in Hawai'i

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1. The specimen from which the type of *Dypsis leucomalla* was obtained, with Suchin Marcus, Floribunda Palms, Hawai'i.



## A spectacular new species of *Dypsis* is described from cultivation in Hawai'i.

This beautiful new species (Fig. 1) from the eastern escarpment forests of central Madagascar has been grown for some time by JM at Floribunda Palms in Hawai'i under the name of *Dypsis* "white petiole." JM acquired seed of it in 1994 from Curt Butterfield of Aroids and Palms, Port Douglas, Queensland, Australia, the seed having been collected in

Madagascar by Mark Overend. The seed was duly sowed in Hawaii, but because growth was very slow, JM returned to Queensland and brought back two batches of seedlings in 1995 and 1996. Seedlings were sold to other collectors in Hawai'i and in California. It is thought that most if not all the plants in California subsequently died. Those on the

Marcus property flourished on the lava soils and have now started to flower and fruit for the first time.

Independently Gunter Gottlieb, a commercial seed exporter in Toamasina, Madagascar, sent photographs of a mystery palm to Toby Spanner, and once circulated, JM was able to match these with his *Dypsis* "white petiole." The Gottlieb palm is said to have been collected in forest "200 km west of Toamasina." This seems improbable as 200 km would mean that the locality would lie well out of the eastern escarpment rain forests and in open plateau, which is contradicted by the photograph in Figures 2 and 3.

Wherever its origins are, the palm has flourished at Floribunda Palms and has reached maturity, flowering and setting seed for the first time. It has been widely admired by growers visiting the nursery. The leaf sheaths in particular are astonishing, with their thick felt of white wool, and the texture of the emerging inflorescence bracts is almost like Styrofoam (Fig. 5). In adult palms it seems that the thick white indumentum becomes less pronounced and more reddish. Although there are some similarities with the poorly known *D.*

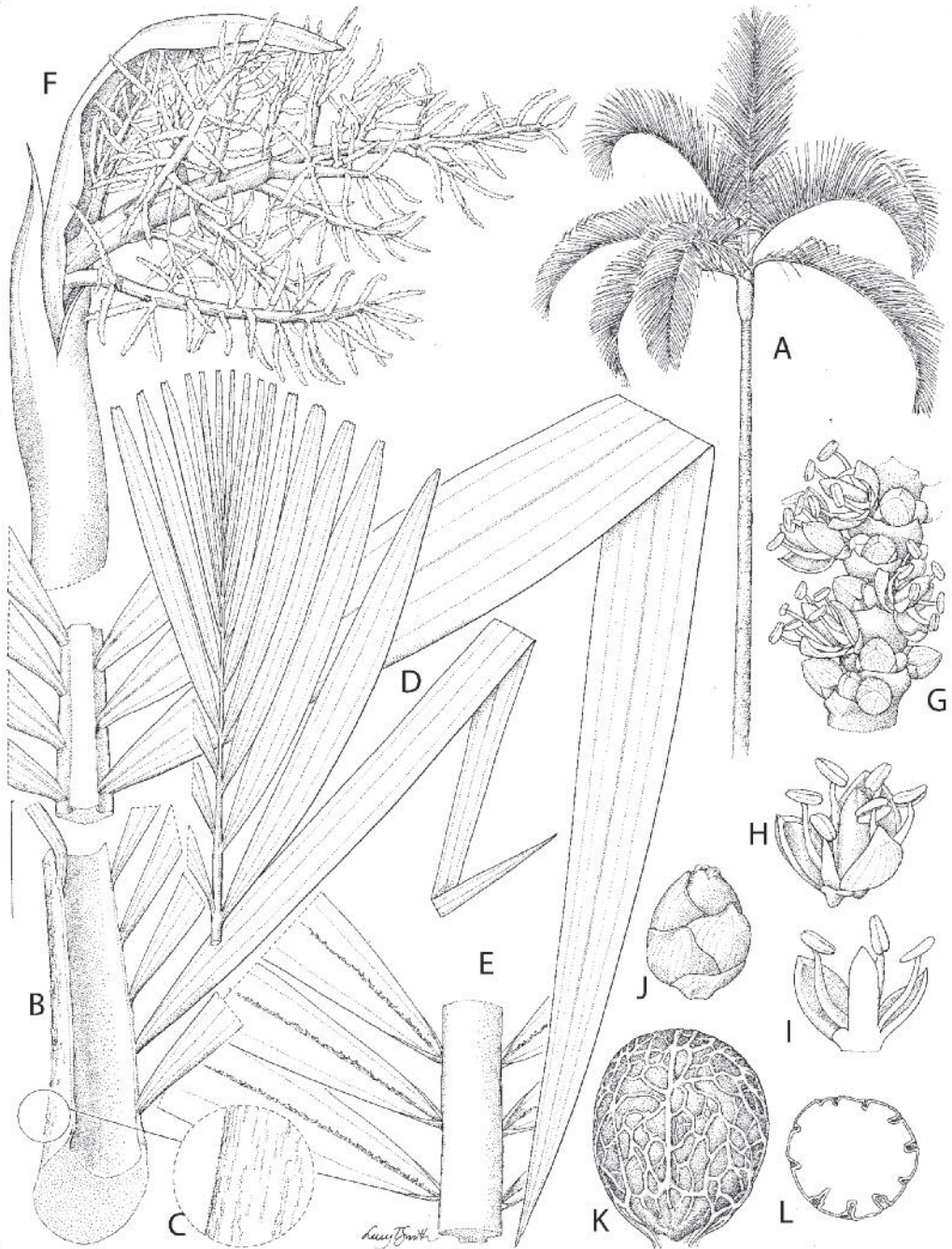
*ovobontsira*, it has nevertheless defied determination, and we now consider that it is undescribed.

***Dypsis leucomalla* J.Dransf. & J. Marcus sp. nov.** Robust single-stemmed tree palm, with crownshaft and leaves with regularly arranged leaflets; sheaths covered with thick, white and brown woolly indumentum, leaflets abaxially with conspicuous red brown lacinate ramenta; endosperm shallowly ruminant. Differs from *D. ovobontsira* in the thick predominantly white indumentum of the sheaths (as opposed to thinner rust-coloured indumentum) and the abundant ramenta on the abaxial leaflet surface (absent in *D. ovobontsira*). Type: Hawai'i, Hilo, Floribunda Palms, Marcus 2 (K). Fig. 4.

Single stemmed robust tree palm; stem to at least 5 m tall, ca. 35 cm diam. Leaves 6–10 in crown, arcuate, to 472 cm long; sheaths somewhat swollen, forming an irregular crownshaft in juvenile palms, more regular and symmetrical in adults, to 74 cm long, ca. 32 cm in diam., sheath abaxially covered with a very dense layer of soft woolly white tomentum in exposed areas, brownish where hidden by preceding leaf sheath, and

2 (left). A mature tree, probably identifiable as *Dypsis leucomalla*, eastern escarpment of Madagascar (Photo: G. Gottlieb). 3 (right). Wild plant of *Dypsis leucomalla* with an inflorescence (Photo: G. Gottlieb).





4. *Dypsis leucomalla*. A. Habit; B. Basal leaflets; C. Detail of woolly surface of petiole; D. Mid and apical leaflets; E. Undersurface of leaflets showing ramenta; F. Inflorescence; G. Triads; H. Staminate flower; I. Staminate flower in vertical section; J. Pistillate flower bud; K. Seed covered by endocarp fibers; L. Seed in cross section. Scale bar: A = 3 m; B, D, E = 8 cm; C = 4 cm; F = ; G = 1 cm; H, I, J, K, L = 7 mm; J = 5 mm. A from a photo by Gunther Gottlieb; B–L from Marcus 2. Drawn by Lucy T. Smith.

interspersed with scattered red brown lacinate scales, adaxially glabrous, dull brown, the apex of the sheath with two triangular auricles to 14 cm long, the margins dark brown and

tattering and with abundant brown scales; petiole very short or to 75 cm long, ca. 10 cm wide, deeply channelled, densely covered with soft white woolly indumentum (Fig. 5); rachis



5. *Dypsis leucomalla*: Petiole bases and peduncular bract showing thick white indumentum.

to 378 cm long, arcuate, bearing 85–91 leaflets on each side; leaflets regularly arranged and held more or less in the same plane, mid leaf

6. *Dypsis leucomalla*: Inflorescence.



leaflets 108 cm long, 8.5 cm wide, all leaflets with a dense covering of red-brown ramenta along the midrib on the abaxial surface and thin white wax on both surfaces; transverse veinlets obscure. Inflorescence (Fig. 6) interfoliar, branched to 2–3 orders to 110 cm long; prophyll beaked, 2-keeled, ca. 85–106 cm long, 12–25 cm wide, densely covered with soft woolly white indumentum; peduncular bract 55 cm long, 25 cm wide, covered with indumentum as the prophyll. Peduncle ca. 30 cm long, ca. 5 × 4 cm in cross section; rachillae crowded, numerous, pale green, glabrous, 15–17 cm long, 6–7.5 mm diam.; triads rather densely arranged, ca. 6 per 1 cm length of rachilla; rachilla bracts conspicuous, thick, triangular, to 4 mm long, 5 mm wide, acute or acuminate, glabrous, forming shallow pits. Staminate flower in bud ca. 4.5 mm long, mid green, expanded flowers 7 mm wide, paler green within (Fig. 7); sepals to 2.5 mm long, connate in the basal 0.5 mm, lobes 1.5 mm wide at the point of connation, somewhat irregular and gibbous at the base due to close packing, margins thin, emarginate or irregularly ciliate; petals 4.5 long, 3 mm wide, longitudinally striate, joined at the very base; stamens 6, filaments 4 × 1 mm, inflexed with a very slender tip, anthers versatile, medifixed, 2.5 × 0.7 mm, pistillode conspicuous, white, ellipsoid. Pistillate flower globular to ellipsoid, ca. 5 × 4 mm; sepals imbricate, striate, 3.3–4 ×



7. *Dypsis leucomalla*: Staminate flowers at anthesis.

2.5–3.5 mm, the margins ciliate; petals similar to sepals, imbricate, striate, 3.5–4.5 × 4 mm, with minute triangular valvate tips, the margins ciliate; staminodes 6, minute, tooth-like, borne at one side of the base of the gynoecium; gynoecium ellipsoid, 5 × 3.5 mm, stigmatic area with three grooves. Fruit spherical, pale green when ripe, 25 mm diam., the epicarp shiny; mesocarp ca. 5 mm thick, mesocarp fibres forming a net-like covering of the seed. Seed more or less spherical, 13–15 × 12–13 mm, seed surface shallowly channelled; endosperm shallowly, rather sparsely ruminant; embryo subbasal.

**CULTIVATED:** Hawaii, garden of Jeff Marcus, Floribunda Palms, *Marcus 2* (holotype K).

**MADAGASCAR:** Toamasina, said to be 200 km west of Toamasina, photographs communicated by T. Spanner from G. Gottlieb (K).

**ETYMOLOGY.** Greek – *leucomalla* = white wool, in reference to the thick indumentum on bracts and petioles.

**NOTES:** In some ways *D. leucomalla* resembles *D. ovobontsira*. This latter species is still known only from a single herbarium specimen – the type collection from Mananara Avaratra. The identity of living specimens purporting to be *D. ovobontsira* has yet to be confirmed and in our opinion seems unlikely. *Dypsis ovobontsira* shares with *D. leucomalla* the regularly arranged leaflets, the densely tomentose sheaths and petioles, inflorescence branched to 3 orders and the shallowly and rather regularly ruminant endosperm. However, the indumentum on the sheaths of *D. leucomalla* is very much thicker, is predominantly gray-white, rather than rust-coloured, and the leaflets have conspicuous densely arranged ramenta that are lacking in *D. ovobontsira*. *Dypsis ovobontsira* is also a rather less robust palm than *D. leucomalla*.

#### Acknowledgments

Toby Spanner forwarded images from Gunter Gottlieb. Lucy T. Smith prepared the analytical plate.