

Dypsis procera Jum.

Ann. Inst. Bot.-Géol. Colon. Marseille sér. 3, 6 (1): 33 (1918); Bull. Ac. Malgache 6: 7 (1923); Cat. Pl. Madagascar, Palmae: 14 (1938); Jum. & H. Perrier, Fl. Madagascar 30: 36 (1945). Type: Madagascar, Fananehana, *Perrier* 12089 (Holotype P).

SYNONYM:

Dypsis longipes Jum., Ann. Inst. Bot.-Géol. Colon. Marseille sér. 3, 6 (1): 37 (1918); Bull. Ac. Malgache 6: 18 (1923); Cat. Pl. Madagascar, Palmae: 13 (1938); Jum. & H. Perrier, Fl. Madagascar 30: 24 (1945). Type: Madagascar, Rantabe, *Perrier* 12030 (Holotype P). **synon. nov.**

Moderate-sized clustering (very rarely solitary) palm of forest undergrowth, tending to form diffuse colonies by few short stolons. **STEMS** erect, to 6 m tall, 1–2.5 cm diam., internodes 2–10 cm long, when young green, with scattered caducous brown scales. **LEAVES** c. 8 in crown; leaf-sheaths forming a crown-shaft; sheath 17–31 cm long, 1.5–2.5 cm diam., pale green, covered in caducous red-brown scales, these frequently in irregular vertical patches c. 3–22 × 1 mm, leaf sheath mouth with irregularly tattering ligule; petiole rarely very short (3–4 cm), usually 10–25 × 0.5–0.8 cm, bearing scattered, caducous red-brown scales; rachis 38–60 cm long (rarely more); blade entire bifid or irregularly divided into 2–8 narrow to broad leaflets; basal leaflets 43–80 × 2–15 cm, mid-leaf leaflets 25–50 × 1.2–8.5 cm, apical leaflets 23–55 × 1.5–15 cm; lamina surfaces bearing numerous minute punctiform scales along main and minor veins. **INFLORESCENCE** interfoliar, branched to 2 orders; peduncle 35–46 cm long, 0.5–0.7 cm diam., brown scaly; prophyll 21–36 × 0.5–0.7 cm, borne 5–12 cm above the base of the peduncle, membranous, bearing caducous scales; peduncular bract, rarely preserved, usually abscising before expansion of rachillae from bud, borne at least 12 cm above prophyll, to 16 × 7 cm; rachis 14–35 cm long, scaly as the peduncle, bearing 8–13 first order branches, lower 2–6 branched; rachillae 10–18 in number, 15–50 cm long, 1.2 mm diam., densely covered in red-brown branched trichomes, triads c. 2 mm distant. **STAMINATE FLOWERS** c. 2 × 1.3 mm; sepals rounded-triangular, 0.8 × 0.7 mm, keeled, glabrous; petals ± elliptic, valvate, striate, 2 × 1.4 mm; stamens 3, antesepalous, filaments 1.1 × 0.4 mm, strap-like, anthers sagittate to subpendulous, 0.9 × 0.5 mm; pistillode conical, to 3 mm. **PISTILLATE FLOWERS** in very young bud c. 1 mm diam., rounded; sepals broadly imbricate, 1 × 1.1 mm; petals triangular-rounded, striate, 1.1 × 0.5 mm; staminodes 3, minute, irregularly dentiform; immature ovary c. 0.5 × 0.2 mm. Mature **FRUIT** unknown; immature fruit ellipsoid, 7 × 3 mm, green. **SEED** with homogeneous endosperm.

NOTE. Jumelle distinguished *Dypsis longipes* from all other species of *Dypsis* sensu stricto by the combination of entire bifid leaf and spicate inflorescence borne on a long peduncle. However, the inflorescence of the holotype clearly displays six scars near the base of the “spike” where branches have been broken off, and there is no doubt that the inflorescence originally bore several long flexuous branches. With this spurious difference removed, *Dypsis longipes* is clearly conspecific with *D. procera*. Furthermore, of the leaf blades in the type one appears to be entire bifid, the other has two leaflets on one side of the rachis; however, in both cases the rachis at the base of the lamina is much



**Dypsis
procera**

narrower than the petioles on the same sheath, suggesting that, far from being whole laminae, the two leaf samples represent the apical portions of two pinnate leaves.

D. procera is a distinctive but rather variable taxon that occurs with some frequency in forest surrounding the Bay of Antongil, in the lowlands and up to altitudes of about 400 m. It is a colonial palm tending to form diffuse clumps by short stolons. Lamina dissection varies from narrowly to broadly and irregularly pinnate, to entire bifid, the entire-bifid forms being particularly striking and beautiful. In most collections the leaf-sheaths bear scales in distinctive irregular vertical patches. *Dransfield* JD6397 differs from other collections in being rather smaller in

all its parts, with a short entire bifid leaf and with leaf sheaths that lack the distinctive patches of scales, but are nevertheless scaly; the rachillae are similar to those of *D. procera* and the staminate flowers have three antesepalous stamens and a conical pistillode. This collection is only tentatively included here.

SPECIMENS SEEN. Maroantsetra: Masoala Peninsula, Hiaraka, Oct. 1986 (fl.), *Dransfield et al.* JD6365 (K, TAN); idem, Oct. 1986 (fl.), *Dransfield et al.* JD6369 (K, TAN); Ambanizana, Oct. 1986 (fl.), *Dransfield et al.* JD6397 (K, TAN) (see note above); Antalavia, Feb. 1988 (fl.), *Dransfield et al.* JD6471 (K, NY, TAN); idem, Nov. 1989 (fl.), *Dransfield et al.* JD6743 (K, TAN); Nosy Mangabe, Feb. 1964 (fl.), *Dransfield* JD6464 (K, TAN); Andranofotsy River, Sahavary, Feb. 1988 (fl.), *Dransfield et al.* JD6455 (K, TAN); idem, Feb. 1988 (fl.), *Dransfield et al.* JD6449 (K, TAN); hill 5 km west of Maroantsetra town, Oct. 1986 (fl.), *Dransfield et al.* JD6361 (K, TAN); Fananehana, Bay of Antongil, Aug. 1912 (fl.), *Perrier* 12089 (Holotype P); Rantabe, Bay of Antongil, Aug. 1912 (fl.), *Perrier* 12030 (Type of *Dypsis longipes* Jum., holotype P). Ampasimanolotra: Ambalarondra, Andranampony, April 1951 (fl.), *Cours* 4537 (K, P).

105. DYPISIS PALUDOSA

This species occurs in small pockets of peat swamp developed on white sands behind the beach along the East Coast. Near Mananara Avaratra, it has been collected up to c. 300 m elevation. It is very variable in leaf dissection within populations. Some forms with entire leaves are very beautiful and would make fine ornamentals. The species name is the Latin for marsh-dwelling, referring to the habitat.

DISTRIBUTION. East Coast: Mananara Avaratra to Ambila-Lemaitso, south of Toamasina, Île Sainte Marie.

HABITAT. Peat swamp forest on white sand behind the

coast and in swampy places further inland; to 400 m.

LOCAL NAMES. Not recorded.

USES. Not recorded.

CONSERVATION STATUS. Vulnerable; although widespread, *D. paludosa* occurs in coastal lowland forest that is much threatened.

Dypsis paludosa J. Dransf., *sp. nov.*

palma mediocris, stolonifera vel rare solitaria, foliis plerumque epetiolatis, irregulariter divisis, segmentis plerumque latis, inflorescentia 2-ramosa, rachillis numerosis, crassiusculis, bracteis rotundatis, floribus staminatis triandris, staminibus antesepalis, pistillodio conico. Typus: Madagascar, East Coast, Ampasimanolotra, Ambila-Lemaitso, c. 5 km south of village, *Dransfield et al.* JD6439 (Holotypus K; isotypi BH, MO, TAN);

SYNONYMS:

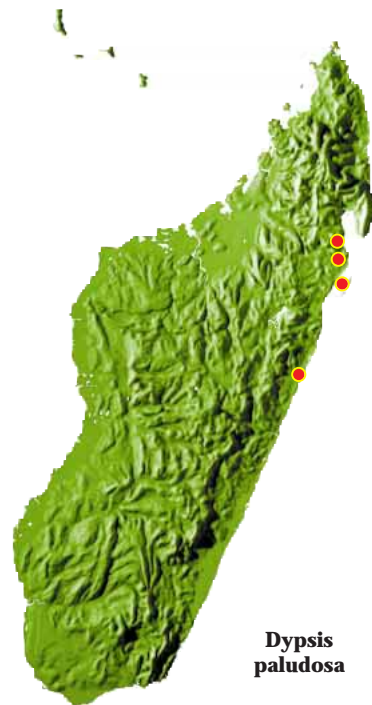
Adelodypsis boiviniana Becc. (non Baill.), Bot. Jahrb. Syst. 38, Beibl. 87: 17 (1906).

Dypsis boiviniana sensu Becc., (non Baill., 1894), Palme del Madagascar 19 (1913); Jum., Ann. Inst. Bot.-Géol. Colon. Marseille sér. 3. 6(1): 25 (1918); Cat. Pl. Madagascar, Palmae: 12 (1938); Jum. & H. Perrier, Fl. Madagascar 30: 50 (1945).

Clustering (rarely solitary) forest undergrowth palm, tending to form rather open colonies by short stolons. **STEMS** 4–6 (–9) m tall, (1.5) 2.5–5 cm diam.; internodes 1–6 cm long, grey-brown near base, green near the crown, when young covered rather densely with caducous red-brown scales. **LEAVES** 9–12 in crown, tending to be porrect, giving the crown a characteristic shuttlecock appearance; crownshaft well developed, c. 30 cm long; sheaths 21–27 cm long, 6–10 cm wide when split and flattened out, abaxially rather densely covered with red-brown stellate scales, scattered or arranged in longitudinal lines, auricles irregularly triangular, to 2 × 0.7–1.5 cm, soon tattering; petiole absent or very short, rarely to 7.5 cm, 10–16 mm wide, adaxially flat or shallowly channelled, abaxially slightly angled, scaly as the leaf sheath; rachis 41–114 cm long, tapering from up to 16 mm wide at base, adaxially channelled near the base, abaxially somewhat angled, abaxially bearing sparse to dense caducous dark brown or pale scales with dark brown punctiform bases; blade coriaceous, very variable, tending to be ± cuneate in outline, entire bifid, or basally entire and with 1–3 distal leaflets or irregularly or regularly pinnate with 2–13 leaflets, when entire, blade to 90 cm long with lobes to 70 × 15 cm, when split into leaflets, leaflets very varied in length and width, mid-leaf leaflets 30–70 × 1.4–5 cm, basal leaflets sometimes very short and slender, 10 × 0.5 cm, all but the apical pair acuminate, apical pair shallowly lobed; leaflets on drying tending to have reflexed margins; adaxial blade surface with very sparse punctiform scales, abaxial surface with scattered brown punctiform scales. **INFLORESCENCE** interfoliar, rarely becoming infrafoliar with age, shorter than the leaves, branching to 2 orders; peduncle 15–50 cm long, 7–15 mm diam., densely rusty hairy; prophyll (8) 15–43 × 1–3 cm, inserted 3–14 cm above the base of the peduncle, sparsely dark brown scaly; pedicular bract 20–30 × 1.5–3 cm, inserted 19–28 cm above the base of the inflorescence, similar to prophyll; rachis 12–25 cm, sparsely to densely dark brown hairy; rachillae numerous (c. 50), 15–35 cm, spreading to pendulous, c. 2.5–3 mm diam. when fresh, shrinking on drying, glabrous to rather densely covered in dark brown hairs; rachilla bracts, entire, low, c. 0.5 × 1.5 mm tending to form shallow pits, c. 1.5–2 mm apart. **STAMINATE FLOWERS** in immature bud c. 1.1 × 0.8 mm; sepals 1 × 0.8 mm, irregularly imbricate; petals 0.8 × 0.5 mm; stamens 3, antesepalous, anthers sagittate, 0.5 × 0.3 mm; pistillode conical, c. 0.3 mm high. **PISTILLATE FLOWERS** at anthesis c. 3 × 2.5 mm; sepals 1.8 × 1.8 mm, irregularly explanate, imbricate, splitting; petals striate, 3 × 2.5 mm, basally imbricate, apically triangular, valvate, somewhat reflexed at anthesis; staminodes 6, minute, dentiform, c. 0.3 × 0.1 mm; ovary irregularly globose, 2.5 × 2.5 mm, stigmas 3, slightly reflexed. **FRUIT** ellipsoid, sometimes somewhat fusiform, c. 18 × 9 mm in immature but probably full grown state, endocarp with coarse fibres. **SEED** 11 × 5 mm; endosperm homogeneous.



Dypsis paludosa, in the Mananara Avaratra Biosphere Reserve (Photo: B. Rogers).



Dypsis paludosa

NOTE. For an account of the interpretation of *Dypsis boiviniana*, see under that species. *D. paludosa* is the palm that Beccari (1912, 1914) interpreted as *D. boiviniana* based on the mixed gathering by Boivin from Île Sainte Marie. When we made collections of a dypsid from Ambila-Lemaitso, we thought that we had at last refound the palm interpreted as *D. boiviniana* by Beccari and the Flore de Madagascar (1945). However, the new material has glabrescent or completely glabrous rather than hairy rachillae. A collection made by Perrier (12054 in P) from near Mananara is a close match for the original Boivin three-stamened

plant, and has hairy rachillae. In leaf it is indistinguishable from the Ambila-lemaitso taxon and also from a sterile collection in P made by Boivin (No 1706 from Tafondrou, Île Sainte Marie). This Boivin collection almost certainly represents the leaves of the specimen with the second order hairy rachillae, that Beccari interpreted as being the type of *D. boiviniana*; the labels on the sheets and state "Forêt de Tafondrou, 1849, Sainte Marie de Madagascar" and are undoubtedly original, rather than new labels written by Beccari. Furthermore, this taxon survives to this day on Île Sainte Marie. The great similarity in



Dypsis paludosa. A leaf sheath $\times 2/5$; B, C two leaves to show variation $\times 1/8$; D inflorescence $\times 1/5$; E detail of rachilla $\times 1.5$; F staminate flower $\times 10$; G fruit $\times 2$. A, C, G from Dransfield et al. JD6494, B, D, F from Dransfield et al. JD6439, E from Dransfield et al. JD6438. Drawn by Margaret Tebbs.

form, texture and size of the leaves of the Ambila-Lemaitso taxon, *Perrier* 12054 and *Boivin* 1706 and the similarity in the form of the inflorescences, suggest to us that the hairiness of the rachillae is probably a variable feature, and we are thus including all these collections in the same species that we describe as new and name *D. paludosa*. A collection (*Dransfield* JD7524), made in November 1994 in the Forêt de Kalalao, about 20 km north of Tafondrou, matches the early specimens of Boivin, but is in very young inflorescence bud. The inflorescence branches to two orders and the rachillae are hairy although very young. It is interesting to record that true *D. boiviniana* was found growing nearby.

SPECIMENS SEEN. Mananara Avaratra: Mananara, Sept. 1912 (buds), *Perrier* 12054 (P); Antanambe, Oct. 1991 (fl.), *Beentje* 4462 (BH, K, MO, P, TAN); idem, April 1992 (fl.), *Beentje & Dransfield* 4620 (BH, K, MO, P, TAN); idem, April 1992 (fl.), *Beentje & Dransfield* 4647 (BH, K, MO, P, TAN); idem, Oct. 1994, (bud), *Dransfield & Beentje* JD7503 (K, TAN). Île Sainte Marie: Tafondrou, 1849 (sterile), *Boivin* 1706 (P); said to be Ravin-tsara (but probably same as *Boivin* 1706, mixed with type of *Dypsis boiviniana* Baillon), *Boivin* s.n. (P); Forêt de Kalalao, Nov. 1994 (buds), *Dransfield* JD7524 (K, TAN). Ampasimanolotra: Ambila-Lemaitso, c. 5 km south of village, Nov. 1986 (buds), *Dransfield et al.* JD6438 (K, TAN), JD6439 (Holotype K; isotypes BH, MO, TAN); c. 6 km south of village, March 1988 (fr.), *Dransfield et al.* JD6492 (K, TAN), JD6493 (K, TAN), JD6494 (K, TAN); 8.6 km south of village, Sept. 1991 (fl.), *Beentje* 4443 (BH, K, MO, P, TAN); 7.2 km south of village, Sept. 1991 (fl.), *Beentje* 4448 (K, TAN).

106. DYP SIS MIRABILIS

There is nothing particularly unusual about the vegetative morphology of this species. It is a single-stemmed palm of the undergrowth of moderate size, with leaves that are divided into few broad leaflets, a habit common among undergrowth dypsid. The species name means wonderful, which may seem inappropriate for a rather ordinary looking palm. However, this species has most unusual staminodes in the staminate flower, and it is this rather obscure feature that caused us wonder.

DISTRIBUTION. Marojejy and environs.

HABITAT. Lowland forest in valley bottoms; 90–200 m.

LOCAL NAMES. Not recorded.

Uses. Not recorded.

Conservation Status. Probably endangered. The distribution area is very small, and numbers are thought to be very low.

***Dypsis mirabilis* J. Dransf., sp. nov.**

palma solitaria, folio foliolis paucis latis, inflorescentia 2-ramosa, rachillis pendulis, inter species floribus staminatis triandris staminibus antesepalis, staminodiis antepetalis ad pistillodium adnatis distincta. Typus: Madagascar, Marojejy, *Dransfield* JD6771 (Holotypus K; isotypus TAN).

Solitary undergrowth palm. **STEM** to 2.5 m tall, to 15 mm diam., internodes c. 40 mm long. **LEAVES** c. 7 in crown; sheath 24 cm long, c. 25 mm diam., longitudinally striate, sparsely scaly, the sheath



Dypsis mirabilis



Dypsis mirabilis. View of crown (*Beentje & Andriampaniry* 4687).