



**Dypsis
lutescens**
(x: sight records)

7–37 × 0.6–1.5 cm (terminal pair joined for up to 3.5 cm), the apices attenuate, with 5–9 faint veins but with only the midrib very prominent on both surfaces, with a few tufts of large ramenta on the abaxial midrib, and with many small scattered glands in long lines on the minor veins (these sometimes absent?). **INFLORESCENCE** interfoliar, sometimes the fruiting stage infrafoliar, spreading, with spreading rachillae, branched to 3 orders (rarely to 2 or 4 orders); peduncle 34–88 cm long, flattened, proximally 2.7–6 × 1–3 cm, distally c. 1.3–2.7 × 0.6 cm diam., glabrous; prophyll 31–102 cm, borne at 5–47 cm above the base of the peduncle, 3.3–4.2 cm wide, with narrow wings, split only at the apex for 7–16 cm, with scattered scales; peduncular bract inserted at 38–68 cm from the base of the peduncle, 48–60 cm long, 4.5 cm wide, closed for the distal 10 cm, with a beak of 2–5 cm, pale brown, waxy and glabrous or with a few scattered scales, abscising and carried up by the lengthening inflorescence and rather quickly deciduous; non-tubular peduncular bracts few, 3–5 × 10–12 mm; rachis 20–110 cm, glabrous, with 5–13 branched and 8–14 unbranched first order branches, the proximal of these with flattened bases 1–1.5 × 0.6–0.7 cm and subtended by bracts of 6–7 mm high; rachillae 6–30 cm long, 2–5 mm diam.; triads distant proximally, more dense distally, inserted in shallow pits; rachilla bracts proud, acute. **STAMINATE FLOWERS** with sepals 1.6–1.8 × 2–2.4 mm, hooded, rounded, gibbous, keeled; petals connate for 1–1.3 mm to the receptacle, free for 1.3–2.2 × 2–2.3 mm, ovate, acute; stamens 6, uniseriate, the filaments 2.8–3.2 mm long, anthers 1.6–1.8 × 0.8 mm, dorsifixed; pistillode 2.5–2.8 × 0.4–0.5 mm. **PISTILLATE FLOWERS** with sepals 2–2.2 × 2.4–2.5 mm, hooded, neither gibbous nor keeled; petals free, 2.8–3.2 × 2.3–3 mm, orbicular or broadly ovate, with small apicula; staminodes 0.3–0.4 mm, thin, empty; ovary c. 3 × 1.4 mm, with short stigmas. **FRUIT** yellow, ellipsoid to obovoid, 12–18 × 7–10 mm, with a pointed apex; endocarp long-fibrous, the fibres almost free. **SEED** ovoid with an obtuse apex and a pointed base, 11–16 × 6–9.5 mm, with homogeneous endosperm. Germination adjacent-ligular; eophyll bifid.

NOTE. Wendland described the genus *Chrysalidocarpus* and the species *Chrysalidocarpus lutescens* at the same time; he also mentioned that this was a common indoors palm in Europe, known as *Areca* or *Hyophorbe indica* or *lutescens*, and also as *Areca borbonica* or *A. dicksoni* (= *Dictyospermum album*);

none of these names refers to the Madagascar material. [*Chrysalidocarpus lutescens* is not based on the Bory name *Hyophorbe lutescens*, since Wendland states categorically that he is describing the species as distinct from *Hyophorbe*. *Areca lutescens* Bory was described from specimens from Réunion, and is a synonym of *Hyophorbe indica* Gaertn. *Areca borbonica* is an old garden name for *Dictyosperma album* (Bory) H. Wendl. & Drude. None of these palms conforms to the description Wendland gave for his new species, with its green leaf-sheaths with a waxy bloom combined with a clustering habit].

With *D. arenarum* and *D. psammophila* it forms a complex that requires further study, particularly since all three taxa occur in the same area and almost in the same habitat. This complex seems close to *D. baronii* and *D. onilahensis*, to which it bears an uncanny resemblance.

We are tentatively including *Chrysalidocarpus glaucescens* Waby in synonymy. This species was based on a particularly glaucous and robust plant cultivated in Trinidad. It is certainly larger in all its parts than *D. lutescens* but we do not think it can be anything else.

SPECIMENS SEEN. Sambava: 7km NE of Anjangoveratra, June 1992 (sd.), *Beentje & Andriampaniry* 4690 (K, TAN, MO). Maroantsetra: Maroantsetra For. Sta., Oct. 1963 (ster.), *Moore* 9018 (TAN); Manambia, Oct. 1986 (y. infl.), *Dransfield et al.* JD6407 (K, P, TAN). Mananara Avaratra: Tapolo (Tampolo) R mouth, Oct. 1911 (bud), *Perrier* 12058 (P); Antanambe, Oct. 1991 (fl.), *Beentje* 4460 (BH, K, MO, P, TAN). Toamasina: Mahatsara For. Res., Feb. 1992 (fr.), *Noyes et al.* 922 (K, P); Foulpointe (Mahavelona), Dec. 1962 (fl.), *Bosser* 16826 (P); 45km N of Toamasina, Feb. 1975 (fl.), *Croat* 32483 (P, TAN). Ampasimanolotra: Ambila, May 1928 (fr.), *Decary* 6303 (K, P, TAN); 5km S of Ambila-Lemaitso, Nov. 1986 (fl.), *Dransfield et al.* JD6441 (K, P, TAN). Manakara: 5km S of Manakara, May 1992 (old infl.), *Beentje & Andriampaniry* 4676 (K, TAN).

SIGHT RECORDS. Sambava: occasional near Antsirabe Avaratra (*Beentje* 1992). Soanierana-Ivongo: common along the coastal road (*Beentje* 1992). Mahanoro: S of Mahanoro (*Beentje* 1991). Sainte-Marie: Ile Sainte-Marie (*Dransfield* 1994).

CULTIVATED. England: Hort. Kew, May 1901 (fl.), *anon.* s.n. (K); idem, June 1979 (fl) & Sept. 1984 (fr.), 000-73.12576 (K). Côte d'Ivoire: 17 km W of Abidjan, June 1970 (fl.), *Leeuwenberg* 8033 (K). Mozambique: Maputo, Feb. 1982 (fr.), *de Koning* 8645 (K). Singapore: Hort. Singapore, anno 1902, *Ridley* s.n. (K); and anno 1920, *anon.* s.n. (K); and June 1929 (fl., fr.), *Furtado* s.n. (K). U.S.A.: Oahu, Hort. Honolulu, Nov. 1930 (fr.), *Wilder* s.n. (K). Trinidad & Tobago: Hort. Tobago, March 1909 (fl.), *Broadway* 2971 (K); Port of Spain, Feb. 1920 (fl.), *Waby* 98749 (K).

34. DYPISIS ARENARUM

This species can easily be confused with *D. lutescens*, which grows in the same area, but has a longer petiole and fewer leaflets; the seed is also much smaller. The name means 'of the sands', since the species occurs on sand near the sea.

DISTRIBUTION. Between Soanierana-Ivongo and Vatamandry.

HABITAT. Littoral forest near fresh water; alt. 1–15 m.

LOCAL NAMES. *Hirihiry* (fide Perrier).

Uses. Not recorded.

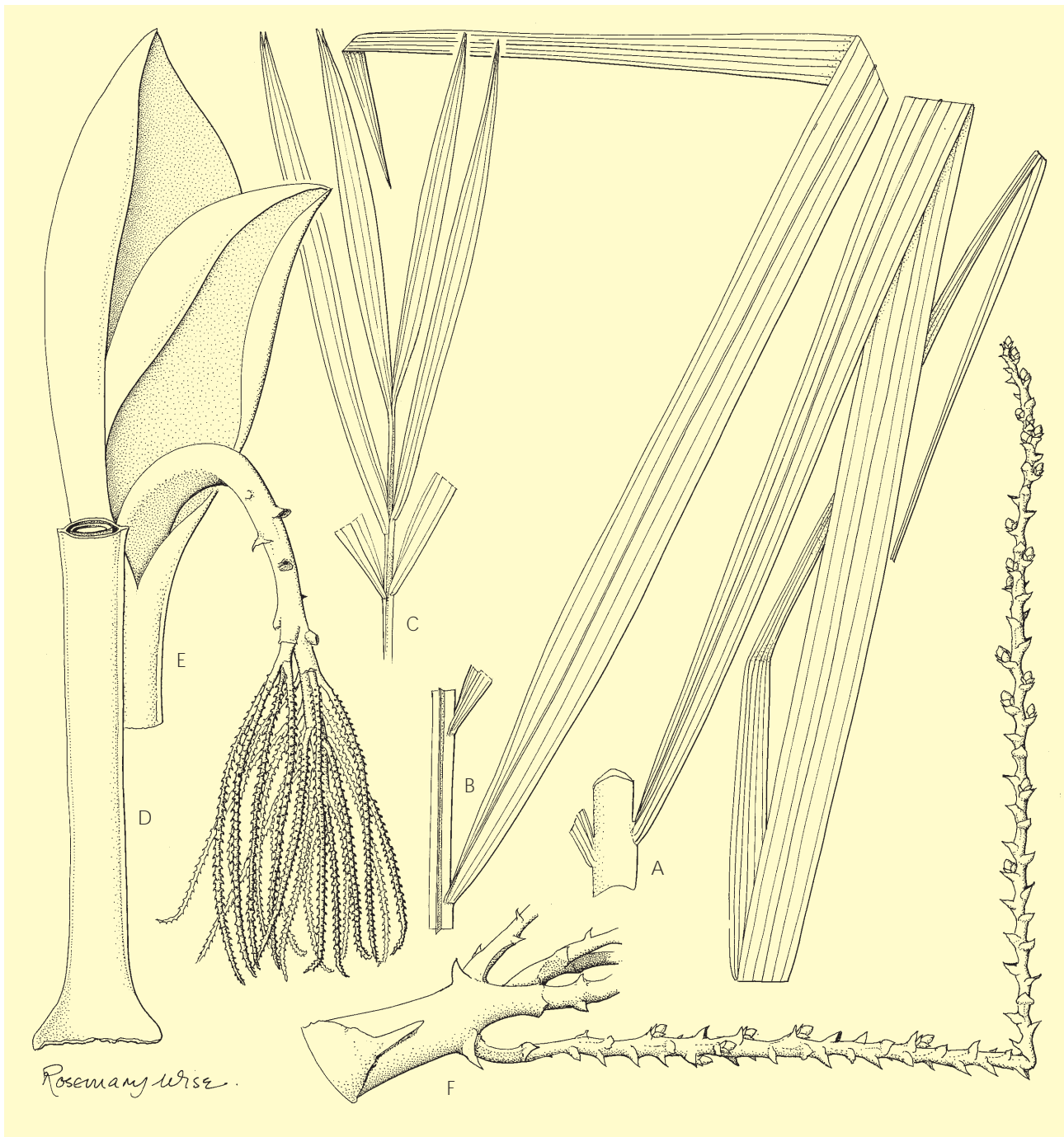
CONSERVATION STATUS. Critical. The distribution area is small, the numbers of this species are thought to be very low, and the vegetation type is threatened by development and fires.

Dypsis arenarum (Jum.) Beentje & J. Dransf. **comb. nov.**

SYNONYM:

Chrysalidocarpus arenarum Jum., Ann. Inst. Bot.-Géol. Colon. Marseille sér. 10, 3: 17 (1922); Jum., Cat. Pl. Madagascar, Palmae: 8 (1938); Jum. & H. Perrier, Fl. Madagascar 30: 98 (1945). Type: Madagascar, Tampina, *Perrier* 13292 (Holotype P).

Clustering palm in tufts of c. 5. **STEMS** 5–6 m tall, 6.5 cm diam.; internodes 6–8 cm; bark dark green, on older trunks brown; wood quite hard, slightly pinkish, moist. **LEAVES** c. 10 in the crown, porrect, slightly arched distally, with opposite leaflets at an angle of 90° with each other; sheath 20–47 cm, whitish green to pale yellow-brown abaxially and distally with wax and scattered reddish scales, reddish brown and glabrous adaxially, turning into the petiole after a small sharp bend but without obvious ligules; petiole 60–72 cm, 1.8–2 × 1.5–1.6 cm proximally, 1.5 × 1.2 cm distally, channelled with sharp edges, pale brown with minute scattered scales; rachis 1.5–1.7 m, in mid-leaf 0.9–1.6 × 0.7–1.2 cm, keeled, pale brown with minute scattered scales to glabrescent; leaflets 28–30 on each side of the rachis, regular, stiff and straight, pendulous in their most distal part, the proximal 81–129 × 0.9–2.5 cm, median 67–80 × 2.2–3.6 cm (interval 4–6.5 cm), distal 16–36 × 0.9–2.1 cm, the terminal pair not or hardly (up to 0.5 cm) joined and with briefly



Dypsis arenarum. **A** basal leaflets × 1/3; **B** mid leaf leaflet × 1/3; **C** leaf tip × 1/3; **D** base of inflorescence × 1/3; **E** distal part of inflorescence showing bracts and rachillae × 1/3; **F** first order branch of inflorescence × 1. **A** – **E** from *Beentje* 4445, **F** from *Perrier* 13292. Drawn by Rosemary Wise.



**Dypsis
arenarum**

(c. 0.3 cm) truncate and dentate apices, apices of median leaflets unequally bifid for 2–3 cm and attenuate, glaucous, with tufts of large red-brown rameta to 4 mm long proximally and abaxially on the midrib, and with many minute scattered scales on the veins (invisible in *Guillaumet* 2527), main veins 1–5, faint; young leaves reddish. **INFLORESCENCE** interfoliar, the part outside the leaf sheath arching through 180°, branched to 2 orders; peduncle 34–57 cm long, proximally c. 2 × 0.5 cm, distally 1.5–2.3 × 0.6–1.2 cm, distally with scattered scales, glabrescent; prophyll 42–75 cm long and 4–5.5 cm wide, borne at 5–17 cm above the base of the peduncle, open for 16–25 cm and hooded distally with an acute apex, coriaceous, ?slightly waxy, abaxially pale brown with scattered scales, adaxially red-brown and glabrous; peduncular bract inserted at 27–34 cm from the base of the peduncle, 39–53 cm long, not or hardly beaked, split over its entire length or closed in the distal part, distally hooded and 12 cm wide, pale brown with scattered scales, not deciduous but remaining contiguous with the prophyll for the most part and similar to the prophyll; non-tubular peduncular bracts near the apex of the peduncle, 1.3–2 cm long, triangular, acute; rachis 11–28 cm long, glabrous, with 5–14 branched and 12–20 unbranched first order branches; first order branches subtended by rachis bracts to 1 × 0.5 cm, with a secondary rachis of up to 6 cm long and with flattened base 9–17 × 3–8 mm and with 2–8 rachillae; rachillae porrect, 10–31 cm, 2–4 mm diam., with rather dense triads in slight pits and with distinct, entire, triangular, acute rachilla bracts. **STAMINATE FLOWERS** with sepals 2–2.2 × 1.8–2 mm; petals connate for c. 0.5 mm, 3.1–3.4 × 1.9–2 mm; stamens 6, slightly unequal with the antepetalous ones with filaments slightly wider at the base, filaments 1.6–2 mm long and cylindrical, anthers 1.8–2 × 0.6 mm, the locules parallel and obtuse, dorsifixed and versatile; pistillode c. 2.4 mm high, 0.6 mm diam. **PISTILLATE FLOWERS** with sepals 2.7–3 × 2.4–3.4 mm; petals 3.5–4.2 × 3–4 mm; staminodes 0.6–0.8 mm, flat; gynoeceum 3.2–3.6 × 2.9–3 mm. **FRUIT** ovoid to ellipsoid with a rounded apex, 10–12 × 8–9 mm, with anastomosing fibrous endocarp. **SEED** slightly obovoid with rounded apex and apiculate base, 8–9.5 × 5.5–6 mm, with subaequatorial depression; endosperm homogeneous.

NOTE. Differs from *D. lutescens* (which occurs in the same localities, in the same habitat) in the longer petiole, the smaller number of leaflets, the longer petals and the more robust rachillae; the inflorescence branches to 2 orders, while in *D. lutescens* it usually branches to 3

orders (but occasionally is branched to 2 orders). From *D. psammophila* it differs in the generally larger leaves (petiole, rachis, leaflets) with many scattered scales; the much longer prophyll and stouter rachillae.

SPECIMENS SEEN. Fenoarivo Atn.: Tampolo, Feb. 1970 (fr., young leaf), *Guillaumet* 2527 (K, P). Ampasimanolotra: Tampina, Nov. 1920 (fl.), *Perrier* 13292 (P, type) and (fr.), *Perrier* 15988 (P); 8 km S of Ambila-Lemaitso, Sept. 1991 (dead infl.), *Beentje* 4445 (BH, K, MO, P, TAN).

35. DYPISIS PSAMMOPHILA

Another species close to *D. lutescens*, but much more slender with spindly stems towering above the coastal bush. The name means ‘sand-loving’, since this taxon is restricted to coastal white sands.

DISTRIBUTION. E Madagascar, between Soanierana-Ivongo and Ambila-Lemaitso.

HABITAT. Coastal forest on white sand; alt. 5 m.

LOCAL NAMES. Not recorded.

USES. Not recorded.

CONSERVATION STATUS. Critical. The distribution area is small, and over the whole area the habitat is being destroyed. Numbers are estimated at less than a hundred.

Dypsis psammophila *Beentje* sp. nov.

D. lutescens affinisissima sed caulis gracilioribus nigris, vagina folii brevioris, foliolis brevioribus angustioribus, inflorescentia in 2 ordinibus ramificantibus differt. Typus: Madagascar, Ambila-Lemaitso, *Dransfield* JD6495 (Holotypus K; isotypus TAN).



**Dypsis
psammophila**
(x: sight records)