

(fl., fr.), *Henderson et al.* 759 (K); idem, June 1989 (bud, fr.), *Phillipson* 1860 (K, P, TAN); idem, Sept. 1991 (fl., fr.), *Beentje* 4441 (BH, K, MO, P, TAN), 4446 (BH, K, MO, P, TAN). Moramanga: S of Moramanga, Feb. 1930 (fr.), *Decary* 7143 (P); Mantady, March 1991 (fl.), *Beentje & Raharilala* 4403 (BH, K, MO, P, TAN), 4405 (BH, K, TAN); idem, Oct. 1993 (fl.), *van Nek* 2000 (WAG), & (y.fr.) 1997 (WAG); Analamazaotra, Aug. 1862 (fl., y.fr.), *Meller* s.n. 21.8.1862 (K); idem, July 1938 (fl.), *Herb. Jard. Bot. Tana* 3778 (K, P); idem, Nov. 1986 (bud), *Dransfield et al.* JD6414 (K, TAN); Fanovana, May 1968 (bud), *Rakotozafy* 620 (P); Rahobeava, March 1951 (fl.), *Cours* 4296 (P). Ambohidratrimo: Ambohidratrimo forest, sine die (bud, y. fr.), *Le Myre de Vilers* s.n. (P). Manjakandriana: Ambatolaona, Ankeramadinika, June 1962 (bud), *Bosser* 16139 (K, P) and Jan. 1964 (fr.), *Bosser* 18983 (P, TAN); E of Ambatolaona, Nov. 1912 (fl., y.fr.), *Viguier & Humbert* 1250 (P); Andrangaloaka (Andrangaloaka), Nov. 1880 (y.fr.), *Hildebrandt* 3717 (K, P); idem, (y.fr.), *Parker* comm. Aug. 1881 (K); Mandraka, Feb. 1985 (fr.), *Dorr et al.* 3716 (K). Anosibe an Ala: Sandrangato-Anosibe, Nov. 1952 (y.fr.), *Capuron & Lerandri* 1681 (P). Marolambo: Andasibe, Onive R., Nov. 1914 (bud), *Perrier* 12076 (P). Mahanoro: 6 km S of Mahanoro, Oct. 1991 (bud, fr.), *Beentje* 4505 (BH, K, MO, P, TAN). Ambositra: Ambohitombo, Dec. 1894 (bud), *Forsyth Major* 603 (K). Ifanadiana: Ranomafana N.P. near Ambatolahy, Dec. 1986 (fr.), *Nicoll* 207 (K, TAN); idem, Duke Primate Centre, Oct. 1987 (fr.), *Overdorff* 7 (K, P). Vondrozo: Vondrozo, (fr.), *Decary* 4854 (K, P, TAN). Amboasary Atsimo: Behara, Feb. 1967 (y.fr.), *Serv. For. Mad.* 26477 SF (K, P). Tolanaro: Andohahela, Col Tanatana, Dec. 1989 (fl., fr.), *Dransfield et al.* JD6776 (K, P, TAN); Andohahela, R. Itrotroky, Feb. 1993 (bud), *Malcomber et al.* 2120 (K, P).

**LOCALITY NOT FOUND:** Ambatovy, Feb. 1965 (y.fr.), *Peltier & Peltier* 5165 (P).

Central Madagascar, without precise locality: 1883 (bud), *Baron* 508 (K, P); Oct. 1882 (y.fr.), *Baron* 1287 (K, type of *Dypsis polystachya*); (ster.), *Baron* 2880 (P, type of var. *stenophylla*, not seen); (fl.), *Baron* 4340 (K, P); (bud, fr.), *Baron* 4465 (K, P); (bud), *Baron* s.n. (K). Madagascar, without any locality: ? 1887 (y.fr.), *Baron* 5072 (K); 1926/1927 (fr.), *Decary* 4854 (K, P, TAN).

## 121. DYPISIS THERMARUM

This is clustering undergrowth palm that is abundant in the undergrowth in deep valleys of the Ranomafana National Park. It can easily be distinguished by its few narrow and long leaflets and the densely hairy short inflorescences. It forms rather untidy clumps at the foot of steep slopes. The species name is the Latin for “of the hot springs”, a translation of the Malagasy *ranomafana*.

**DISTRIBUTION.** Only known from Ranomafana National Park.

**HABITAT.** Humid montane rain forest, on steep slopes; 800–1400 m.



**Dypsis thermanum.** Whole plant in undergrowth at Ranomafana.



**Dypsis thermanum.** Detail of inflorescences (*Dransfield & Beentje* JD7511).

**LOCAL NAMES.** *Fanikara* (Tanala).

**USES.** Stems used for making traps to catch crayfish.

**CONSERVATION STATUS.** Rare, probably not at present under threat, despite being geographically restricted.

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

inflorescentia gregem specierum floribus staminatis triandris staminibus antepetalis, staminodiis antesepalis alternantibus similis, sed floribus staminatis 6 staminibus biseriatis, antheris didymis differt, *D. angustae* similis sed inflorescentia rachillis numerosioribus longioribus differt, *D. anovensi* similis sed textura folii forma inflorescentiae diversa differt. Typus: Madagascar, Fianarantsoa, Ranomafana National Park, Nov. 1994 (fl.), *Dransfield & Beentje* JD7511 (Holotypus K; isotypi BH, MO, P, TAN).

Slender solitary or clustering undergrowth palm, forming small clumps of up to 8 stems. **STEMS** to 2 m tall, 4–9 mm diam., internodes 10–42 mm long, dark green with pale yellow-green vertical striping, glabrescent, or with very sparse pale brown scales. **LEAVES** c. 6 in crown; sheaths 6–8 cm long, 0.6–1 cm diam., sparsely brown scaly, whitish or pale yellow-green, forming a well-defined crownshaft, auricles present, rather narrow, 6–11 × 4–5 mm; petiole 4–14 cm long, 2 mm diam., sparsely scaly; rachis 8–14 cm; leaflets 2–5 on each side of the rachis, ± equal, mostly composed of a single fold, occasionally with up to 4 folds, sometimes slightly irregular, 15–35 × 0.4–2.5 cm, adaxially lamina with scattered pale brown punctiform scales, abaxially with abundant pale brown punctiform scales and scattered bands of caducous dark brown scales. **INFLORESCENCE** branching to 1, very rarely to 2 orders, much shorter than the leaves; peduncle 10–16 cm long, c. 2 mm wide; prophyll 9–12 × 0.5–0.7 cm, rather densely covered in reddish brown indumentum; peduncular bract similar to prophyll,



***Dypsis thermarum*.** A stem base and suckers × 3/5; B crown × 3/5; C detail of rachilla × 4; D staminate flower, one petal removed × 20. A from *Beentje* 4420, B – D from *Dransfield et al.* JD7511. Drawn by Rosemary Wise.



**Dyopsis  
thermarum**

exceeding it by 0.5–4 cm; rachis 5–10 cm, c. 2 mm diam., very densely covered in long lacinate dark red-brown hairs; rachillae 11–28, tending to diverge  $\pm$  at right angles, short and rather stocky, 1.5–4 cm long, c. 1.5 mm diam., increasing slightly in diameter in fruit, somewhat angular, densely covered in red-brown lacinate hairs; rachilla bracts c. 2 mm apart, short with numerous marginal lacinate hairs. **STAMINATE FLOWERS** rounded, c. 1.5 mm diam.; sepals rounded, irregularly keeled, 0.9  $\times$  0.9 mm; petals triangular, striate, 1.2  $\times$  1.4 mm; stamens 6, biseriate, antesealous filaments 0.4  $\times$  0.3 mm, antepetalous 0.5  $\times$  0.3 mm, anthers didymous, 0.3  $\times$  0.3 mm; pistillode absent. **PISTILLATE FLOWERS** globular, c. 1.3 mm diam.; sepals 1  $\times$  0.4 mm, imbricate, keeled; petals 1.4  $\times$  1.3 mm, broadly imbricate at the base, striate; staminodes 3 or more, irregular, minute; ovary c. 1 mm diam., with slightly eccentric stigmas. **FRUIT** orange at maturity, fusiform, 11  $\times$  4 mm. **SEED** 7  $\times$  3.5 mm; endosperm homogeneous, embryo lateral near the base.

**NOTE.** This species appears to be a common palm of the forest undergrowth on steep slopes in the National Park at Ranomafana. It resembles *D. angusta* but can be distinguished by the staminate flowers having six rather than three stamens. The leaflets are also of a different texture. *D. anovensis*, known only from its type, is superficially similar, but has an inflorescence of very different form. Collections made in November 1994 (*Dransfield & Beentje* JD7511) have flowers at staminate anthesis, and these flowers appear to have six fertile stamens. Despite this, the affinities of the palm remain with the species formerly included in *Trichodypsis*.

**SPECIMENS SEEN.** Fianarantsoa: Ranomafana National Park, Nov. 1994 (fl.), *Dransfield & Beentje* JD7511 (Holotype K; isotypes BH, MO, P, TAN); idem, July 1992 (fl.), *Beentje & Beentje* 4734 (BH, K, MO, P, TAN); idem, Dec. 1986, *Marion Nicoll* 203 (K, MO, P, TAN); idem, March 1992, *Malcomber & Schatz* 1309 (K, MO, P, TAN); idem, April 1993, *Malcomber et al.* 2446 (K, MO, TAN); idem, March 1991 (fl., fr.), *Beentje* 4420 (K, BH, MO, P, TAN).

## 122. DYP SIS ANGUSTA

This is a small palm of the undergrowth of low crown forest occurring on the isolated peak of Vatovavy, at the edge of the coastal plain south of Mananjary. We refound it in November 1994. The Latin name means narrow, presumably in reference to the narrow leaflets.

**DISTRIBUTION.** East Coast, only known from the Ifanadiana area and Farafangana.

**HABITAT.** Rain forest; 45–500 m.

**LOCAL NAMES.** Not recorded.

**USES.** Not recorded.

**CONSERVATION STATUS.** Endangered. Only known from three sites, in which population numbers are low. None of these sites is protected.

**Dyopsis angusta** *Jum.*

Ann. Inst. Bot.-Géol. Colon. Marseille sér. 3, 6 (1): 34 (1918); Bull. Acad. Malgache 6: 12 (1923); Cat. Pl. Madagascar, Palmae: 12 (1938); Jum. & H. Perrier, Fl. Madagascar 30: 43 (1945). Type: Mananjary, Mt Vatovavy, Aug. 1915, *Perrier* 11976 (holotype P).

Slender clustering undergrowth palm. **STEMS** to 2 m or more tall, 5–10 mm diam., internodes to 9 cm long near the stem base, decreasing to 0.8–1.2 cm long near the crown, basally bearing abundant chocolate-brown caducous scales, glabrescent distally; crown with c. 4–6 leaves; leaf-sheaths 5–7 cm long, forming a crown-shaft, striate, covered with caducous chocolate-brown scales, auricles scarcely developed or to 10  $\times$  2 mm, membranous. **LEAF** to 43 cm long including petiole; petiole 3–12 cm long, 1.5–3 mm wide,  $\pm$  triangular in cross-section, bearing sparse caducous pale and chocolate-brown scales; rachis 10–29 cm long, bearing 2–3 or 7–9 (see notes below) narrow,  $\pm$  approximate, regularly arranged leaflets on each side; leaflets 9–30  $\times$  0.7–2.1 cm, drying dark or pale



**Dyopsis  
angusta**