phone" type establishment growth, and they produce simultaneously several complex, much branched inflorescences with small flowers followed by numerous, rapidly maturing (three months), small fruits in great quantity with readily germinating seeds. These features promote and enhance their gregarious nature.

## Keys to the Species of *Kentiopsis*

### Key Based on Vegetative Characters

Leaf sheath densely dotted with scales to tomentose, rachis not recurved, pinnae flat to drooping.
- Sheath initially densely covered with appressed white tomentum, rachis initially white-tomentose also, new expanding leaf light green ..... 2. *K. oliviformis*
- Sheath initially covered with prominent, blackish-centered, white-margined scales, aging densely dotted with blackish scales, rachis persistently brown-tomentose, new expanding leaf chocolate-brown to bright red ..... 1. *K. magnifica*

Leaf sheath waxy, almost glabrous but minutely puncticulate with sunken, lacerate, dark brown, barely visible scales, rachis ± recurved
- Leaf sheath conspicuously wine-colored to purple or copper-colored, glaucous wax layer thin to thick, leaves slightly to moderately recurved, pinnae held in an open V or flat to slightly pendulous, dark green .. 4. *K. pyriformis*
- Leaf sheath purplish obscured by a thick layer of bright glaucous wax, leaves strongly recurved, pinnae stiffly erect in a narrow V, glaucous ..... 3. *K. piersoniorum*

### Key Based on Floral Characters

Branches of inflorescence ± swollen basally, rounded to angled, branching to (2)-3 orders, staminate flowers with 30 or more stamens and distal-lateral to the pistillate flower in the triad
- Inflorescence erect, branches pale green and bearing white scales, inner bracteole not sepal-like, staminate flowers strongly asymmetrical, pointed in bud, with deltoid sepals ..... 2. *K. oliviformis*
- Inflorescence spreading, branches glaucous and spotted with brown scales, inner bracteole large, rounded, ± sepal-like, staminate flowers ± symmetrical, not pointed in bud, with rounded or emarginate sepals
- Staminate flowers broadly ovoid to barrel-shaped in bud, stamens connate in a conspicuous basal ring, pistillode short, conical, staminodes 2–3 ..... 1. *K. magnifica*
- Staminate flowers elongate, bullet-shaped in bud, stamens free or nearly so, pistillode columnar, nearly equalling stamens, staminodes 6 in a crownlike ring ..... ..... 3. *K. piersoniorum*

Branches of inflorescence not swollen basally, sharply angled and dorsiventrally flattened, branching to 3–4 orders, staminate flowers with 20 or fewer stamens and median-lateral to the pistillate flower in the triad ..... 4. *K. pyriformis*

### Key Based on Fruits and Seeds

Fruits with apical stigmatic remains
- Mesocarp fibers adherent to endocarp throughout, seeds ovoid-elongate to ellipsoid, fruits bright red ..... ..... 2. *K. oliviformis*

Mesocarp fibers not adherent to endocarp throughout, seeds bullet-shaped and truncate to depressed basally
- Mesocarp fibers adherent to endocarp only basally, leaving a striate ring on it, fruit red .... 1. *K. magnifica*
- Mesocarp fibers few, not leaving a striate basal ring on endocarp, fruit purplish ..... 3. *K. piersoniorum*

Fruit purplish with subapical stigmatic remains, mesocarp fibers not adherent to endocarp, seed pyriform ..... ..... 4. *K. pyriformis*

### Key to the Juveniles

Leaves 50–100 cm long spirally arranged
- "Saxophone" type growth, petiole with prominent appressed scales ..... 2. *K. oliviformis*
- No "saxophone" growth, petiole glabrous ..... ..... 3. *K. piersoniorum*

Leaves 50–100 cm long distichously arranged
- "Saxophone" growth, petiole reddish to purple, glabrous ..... 4. *K. pyriformis*
- No "saxophone" growth, petiole densely and shortly brown tomentose ..... 1. *K. magnifica*

## 1. Kentiopsis magnifica (H. E. Moore) Pintaud & Hodel comb. nov. (Fig. 3)

*Mackeea magnifica* H. E. Moore, Gentes Herb. 11:304 (1978); Moore & Uhl, Allertonia 3(5): 324–325 (1984). Type: *MacKee 26471* (holotype BH).

Emergent palm. Trunk to 25 m tall, 25 cm dbh. Leaves 8–9, spreading; sheath 0.8–0.9(–1.5) m long, initially covered with blackish-centered, white-margined scales; petiole 20 cm long, minutely covered with brown-centered pale-margined scales of trichomes concrescent toward center; rachis ca. 2.25 m long, densely covered by similar scales; pinnae to 55 on each side, dark green on both surfaces and coriaceous, with numerous veins especially prominent abaxially, median pinnae 74–80 × 2.4–5 cm, the lowermost continuing into lorae to 2 m long, all arranged in one plane, although leaves in upper part of crown often twisted so pinnae oriented vertically (but still in one plane). Inflorescences 45–55 cm long, spreading, branched to three orders; peduncle 6.5–9 cm long, densely covered especially proximally with small brown-centered scales with long diverging white trichomes along margins; prophyll and first peduncular bract 51–55 cm long, densely tomentose-floccose abaxially; rachis 16–17.5 cm long, scarcely scaly, with 15–20 angled branches; rachillae 27–44 cm long, waxy glaucous and glabrous. Flowers in triads nearly to apex of rachillae; bract subtending triad prominent, rounded, liplike; staminate flowers brown in bud, white inside, symmetrical, 12 mm diameter

and 10 mm high at anthesis; stamens 32–38, exceeding petals, connate basally in a conspicuous ring, filaments 5 mm long, equalling petals, subulate, awl-shaped, straight at apex, anthers 3.5 mm long, linear-oblong, introrse, connective large, dark; pistillode less than half as high as filaments, conic, 3-lobed; outer bracteole surrounding pistillate flower ring-like, equalling triad bract, inner one twice as high, partly surrounding flower, both brown.; pistillate flowers 8 × 6 mm at anthesis, gynoecium 5 mm high, ovoid, stigmatic lobes prominent, white; staminodes 2–3. Fruits 2.2 × 1.2 cm, red, perianth brown, stigmatic remains apical; mesocarp with longitudinal fibers adherent to endocarp only basally; endocarp glossy, with longitudinal groove and round basal invagination. Seeds 15–16 × 9 mm, bullet-shaped, truncate basally. Leaves of juvenile individuals distichously arranged; "saxophone" type establishment growth lacking.

*Specimens examined, additional to those cited in Moore & Uhl (1984).* NEW CALEDONIA. Upper Mayavetch valley, 550 m elev., 20°18′S, 164°23′E, 29 Apr. 1995 (stam. fl.), *J.-C. Pintaud & J.-L. Aubé 175 & 176* (K), *177* (NY), *178 & 179* (NOU), *180* (K) (all juv.); Col d'Amos, 550 m elev., 20°18′S, 164°26′E, 13 Jun. 1995 (ster.), *J.-C. Pintaud & M. Olivier 215* (K); Upper Mayavetch valley 550 m elev., 18 Sept. 1995 (juv.), *J.-C. Pintaud 281* (NOU), 282 (NY); id., 17 Mar. 1996 (stam. fl.), *J.-C. Pintaud & D.R. Hodel 339* (K, NY); Col d'Amos 550 m elev., 29 Apr. 1996 (stam. fl.), *J.-C. Pintaud & J.-P. Tivollier 346* (NY); Mayavetch, 550 m elev., 6 Jun. 1996 (pist. fl.), *J.-C. Pintaud & D. R. Hodel 373* (NOU).

*Distribution. Kentiopsis magnifica* occurs in an area of about 10 × 1–4 km along Col d'Amos and the Pam Penninsula ridge at the north end of New Caledonia where it grows in dense populations at 300–600 m elevation.

*Ecology. Kentiopsis magnifica* is an emergent tree in remnant rain forest on schists in many small, close but mostly separate valleys. Associated palms include *Basselinia gracilis, Cyphophoenix elegans,* and *Moratia cerifera.*

*Phenology.* Anthesis occurs from March through June; fruits mature from December through March (Fig. 2). Flowers are visited by bees that have nests in the forest while the ant *Polyrhachis guerini* feeds on the stigmas of pistillate flowers; also, a very abundant *Tetranichydae* mite feeds on the fleshy inflorescence branches and flowers.

*Conservation status.* Vulnerable (Jaffré et al. in press). Although *K. magnifica* occurs gregariously in numerous populations, its range is quite limited and the remnant forest habitat is fire-prone.

*Taxonomic history.* H. E. Moore, Jr. (1978) named and described *Mackeea magnifica* as a monotypic genus, stating that it differed from *Kentiopsis,* also monotypic at the time, by its symmetrical staminate flowers, mesocarp fibers adnate only basally to the endocarp, and short, trifid pistillode. These characters proved to be quite variable from species to species within the New Caledonian Archontophoenicinae with the wider series of specimens now available for study and thus are not sufficiently significant to maintain *Mackeea* as a distinct genus. Moore also stated that *Mackeea* was distinctive by the conspicuous layer of tannin cells overlaying the endocarp but *Kentiopsis oliviformis* was ambiguously described as having or lacking a layer of tannin cells in Moore and Uhl (1984). *K. oliviformis* has, in fact, a layer of tannin cells like the three other members of the genus. On the other hand, Moore did not say anything about the connation of stamens in a ring, a unique character.

*Derivation of name.* Moore (1978) chose the epithet because *K. magnifica* is one of the tallest and stateliest palms of New Caledonia.

Distinguishing features of *Kentiopsis magnifica* include the thick indument of brown scaly-concrescent trichomes on the petiole, rachis, and peduncle; bright red to chocolate-brown expanding leaf with pinnae held in one plane (initially vertically) and stamens connate in a ring in the proximal 1/3. "Saxophone" type establishment growth is not present but eccentric root development does occur. Leaves are distichously arranged in juvenile plants and petioles are covered by a dense brown tomentum. *Kentiopsis magnifica* is very similar to *K. piersoniorum* in inflorescence architecture and morphology but quite different in floral structure.

**2. Kentiopsis oliviformis** (Brongn. & Gris) Brongn., Compt. Rend. Hebd. Séances Acad. Sci. 77: 398. 1873; Beccari, Le Palmae della Nuova Caledonia: 18. 1920; Moore & Uhl, Allertonia 3(5): 324–325. 1984. (Fig. 4)

*Kentia oliviformis* Brongn. & Gris, Bull. Soc. Bot. France 11: 313. 1864; Ann. Sci. Nat. Bot. V.