The Varieties of

*Chambeyronia macrocarpa* (Areaceae)

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Endemic to New Caledonia, *Chambeyronia macrocarpa* has long been a favorite subject of palm enthusiasts in tropical and even subtropical areas. Its many attributes include a rather robust, neat habit; shiny green, attractively ringed trunk; prominent crownshaft; splendid crown of elegantly arching pinnate leaves; and showy clusters of large, red fruits. Perhaps it is most famous, though, for its newly emerging, unfolding leaf that is typically a striking vibrant red, making it the perfect complement to the dark green forest in which it grows and earning it the common name of “flamethrower” among palm fanciers.

Researchers and palm enthusiasts have recognized several variants of *Chambeyronia macrocarpa* based primarily on the color of the leaf bases forming its handsome crownshaft. One of the earliest of these variants was recognized for its unusual pale yellow, nearly white, crownshaft, and was actually known in the first half of the 20th century as a separate species, *C. hookeri*. As New Caledonia was more thoroughly explored in the latter half of the 20th century and international and local interest in its palms reached a crescendo, palm enthusiasts and researchers discovered, identified, and cultivated several other variants of this popular palm.

In one of the most recent treatments of the New Caledonia palms, Hodel and Pintaud (1998) noted and illustrated these variants of *Chambeyronia macrocarpa* but, because of a lack of adequate material and information, assigned them no formal taxonomic rank. Indeed, they maintained *C. hookeri* as a synonym of *C. macrocarpa* as Moore and Uhl (1984) had proposed earlier.

However, additional field work and studies have yielded sufficient information to circumscribe adequately these variants of *Chambeyronia macrocarpa*, enabling us to name and describe them here formally.

In cultivation, at least, seeds from a named variety of *Chambeyronia macrocarpa* do not always produce plants that exhibit the characteristic coloration of its parent. This variability among offspring may be the result of hybridization or the inherent, natural variability among varieties.

Cited specimens were examined in person and/or as high-resolution digital images and, in a few cases, as living plants in the wild. Some specimens at K are lacking barcodes because they have yet to be entered into the database. Nearly all the photographs of living plants were scanned from the original transparencies dating from 1995 to 2000.
Key to the Varieties of *Chambeyronia macrocarpa*

<table>
<thead>
<tr>
<th>Description</th>
<th>Variety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaf base with persistent, dense, greyish indument, northeastern New Caledonia</td>
<td><em>var. roxanniae</em></td>
</tr>
<tr>
<td>Leaf base glabrescent upon exposure, central and southern New Caledonia.</td>
<td></td>
</tr>
<tr>
<td>Leaf base of uniform color.</td>
<td></td>
</tr>
<tr>
<td>Leaf base, distal trunk, and bracts pale yellow</td>
<td><em>var. hookeri</em></td>
</tr>
<tr>
<td>Leaf base, distal trunk, and bracts shiny dark green</td>
<td><em>var. macrocarpa</em></td>
</tr>
<tr>
<td>Leaf base green dotted or striped with yellowish green.</td>
<td></td>
</tr>
<tr>
<td>New unfolding leaf green, pinnae narrow, to 5.5 cm wide</td>
<td><em>var. viridis</em></td>
</tr>
<tr>
<td>New unfolding leaf red, pinnae wide, to 10 cm wide</td>
<td><em>var. flavopicta</em></td>
</tr>
</tbody>
</table>

**Chambeyronia macrocarpa var. macrocarpa** Becc., Palme Nuova Caledonia 13. *T. I* (a–i). (1920). **Fig. 1.**


Hodel and Moya López (2021) reviewed and updated the nomenclature and typification of *Chambeyronia macrocarpa*, and we follow their findings here.


Type. [Cultivated], [1876], unknown locality.

Moore and Uhl (1984) proposed this name as a synonym.

= *Kentia lindenii* hort. Linden ex André, Illustr. Hortic. 24: 61 (1877). ‘*lindenii*’.

Type: New Caledonia. [Cultivated], [1875], unknown locality, Linden s.n., (lectotype: designated by Hodel and Moya López 2021: 14, [illustration], t. 276, in André [1877]).


Type. New Caledonia. [Cultivated], [1877], unknown locality, Linden s.n., (lectotype: designated by Hodel and Moya López 2021: 14, [illustration], t. 451, in Rodigas [1882]).


“Cyphokentia macrocarpa” (Brongn.) Rob., in Garden 14: 345. 1878, illeg. name.


Robust, solitary tree palm. Trunk 15–25 m tall, 25 cm diam., green distally, brownish proximally, leaf scars distinct but not prominent. Leaves ca. 10, newly unfolding bright red, spreading, moderately arching; leaf base 1.10–1.20 m long, forming a prominent, cylindrical crownshaft, dark glossy green, uniform, soon glabrous; petiole 12–45 cm long; rachis 2.1–4.0 m long, dotted with tiny brown scale-like hairs; pinnae 35–40 on each side of rachis, median pinnae 1–1.5 m x 5–8 cm, distal ones 25 x 2 cm, a prominent midrib and 1 marginal nerve on either side, pinnae glabrous except for scattered, median fixed, brown ramenta along midrib abaxially. Inflorescences 2–4, 70–80 cm wide, branched to 3 orders; peduncle 10–15 cm long; prophyll 62–85 cm long, first peduncular bract 65–75 cm long; rachis 30–40 cm long; rachillae 15–50 cm long, strongly flexuose, dotted with minute greyish scale-like hairs. Flowers in triads in proximal 1/3–2/3 of rachillae, distally with only dyads of staminate flowers. Fruits 4–5 × 2.4–3 cm, ellipsoid to obovoid or subglobose with apical stigmatic remains, bright red.

Etymology: The epithet macrocarpa is from the Greek macro, meaning large, and carpus, meaning fruit, and refers to the large fruits of this species, among the largest of New Caledonian palms.

Distribution and Ecology: Chambeyronia macrocarpa var. macrocarpa occurs at low elevations (0–600 m) as a sub-canopy and canopy component of tall rain forests in the southern ultrabasic massif of New Caledonia, especially on oxydic colluvium and alluvium, occasionally on schists (Mont Koghi, Thy Valley). Individuals are usually scattered and do not form gregarious
populations. In the rain forest of the Rivière Bleue it is present at low densities on alluvium along the river but is absent from adjacent slopes.

**Notes:** This variety, the tallest, reaches the canopy of the rainforest on Mont Koghi, at 30 meters high. It is the most widely cultivated variety and can be found wherever palms are grown in tropical and subtropical areas.

**Chambeyronia macrocarpa var. flavopicta** Hodel & Pintaud var. nov.

“watermelon Chambeyronia” Figs. 2–4.

Type: New Caledonia [Province Sud], “Pont du Carré (entre Bourail et Poya), en forêt galerie,” 30 m, 22 May 1967, MacKee 16815 (holotype P 00192682; isotypes K, NOU 059862, NOU 059863, P 00192683).

This variety is distinctive in the vertically yellow-striped or -mottled crownshaft, distal part of the trunk, and inflorescence bracts.

Robust, solitary tree palm. Trunk 10–15 m tall, ca. 25 cm diam., light yellowish green distally but vertically streaked with yellowish green, elongated spots, brownish proximally, leaf scars distinct but not prominent. Leaves ca. 10, unfolding bright red, spreading, moderately arching; leaf base 1–1.2 m long, forming a prominent, green crownshaft, vertically streaked with yellowish green, elongated spots, glabrescent; petiole 12–45 cm long; rachis 2–3.5 m long, dotted with tiny brown scale-like hairs; pinnae 30–40 on each side of rachis, median pinnae 0.9–1.5 m x 4–10 cm, distal ones 25 x 2 cm, a prominent midrib and 1 marginal nerve on either side, glabrous except for scattered, medifixed, brown ramenta along midrib abaxially. Inflorescences 2–4, 70–80 cm diam., branched to 3 orders; peduncle 10–15 cm long; prophyll 62–85 cm long, first peduncular bract 65–75 cm long; rachis 30–40 cm long; rachillae 15–50 cm long, strongly flexuose, dotted with minute greyish scale-like hairs. Flowers in triads in proximal 1/3–2/3 of rachillae, distal part with only dyads of staminate flowers. Fruit ellipsoid to obovoid or subglobose with apical stigmatic remains, 4–5 x 2.4–3.0 cm, red.

**Etymology:** The epithet *flavopicta* is from the Latin *flavo*, meaning yellow, and *picta*, meaning painted, and refers to the yellow-streaked leaf bases forming the crownshaft, distal part of the trunk, and prophyll of the inflorescence.

**Distribution and Ecology:** Restricted to dry areas of central-western New Caledonia, *Chambeyronia macrocarpa var. flavopicta* occurs in remnant gallery forests along seasonal streams at low elevations and in valley bottoms of foothills of adjacent mountains to 500 m elevation. Often forming gregarious populations, it is a subcanopy, canopy, and emergent component of forests on both ultrabasic and schistose rocks. Bursts of bright red leaves in
A fruiting specimen of *Chambeyronia macrocarpa* var. *flavopicta* in the garden of Rick Luna, San Clemente, California. Note the yellowish striped crownshaft and trunk.
gregarious populations along streams are spectacular sights, particularly in the lower valleys of the western side of the Me Maoya massif.

Notes: A more recent introduction, it is typically referred to as the “watermelon Chambeyronia” because of its yellow striped or mottled crownshaft and is probably the second most common variety in cultivation. It is the only palm that can be seen in the dry lowlands of the western coast. Fruit size and shape and the pattern of mesocarp fibers are variable in this variety and as plants age the yellow striping tends to become less conspicuous.

Additional Specimens Examined: Col Toma, 450 m, forêt humide, 18 Jan. 1967, MacKee 16300 (K 000113614, NY 02325467, NY 02325468, NY 02325467, P 00192684, P 00192685, P 00192686, P 00192687); beside tributary of Rivière Moindah, ca. 2 km beyond ford at mine camp on road to mine Emma and Pinpin, ca. 160 m elev., 2 Nov. 1978, Moore 10458 (BH [n.v.], K, NY 02642115); Base of Me Maoya massif, lower Nodela valley, 21°26′S, 165°21′E, 100 m elev., near a stream in rain forest on ultrabasic rocks, 13 May 1995, Pintaud 193 (K 000520092, P 00192628, P 00192629, P 00192630, NY 02325476-02, NY 02325476-03, NY 02325476-04).

Chambeyronia macrocarpa var. hookeri Hodel & Pintaud stat. and comb. nov. Figs. 5–7.


  Type. New Caledonia. [Cultivated], [1877], unknown locality, Linden s.n., (lectotype: designated by Hodel and Moya 2021: 14, [illustration], t. 451, in Rodigas [1882]).

This variety is distinctive in its uniformly pale yellow crownshaft, distal part of the trunk, and inflorescence bracts.

Robust, solitary tree palm. Trunk 4–10 m tall, 20–25 cm diam., yellowish to yellowish green distally, brownish proximally, leaf scars distinct but not prominent. Leaves 7–10, newly unfolding bright red, spreading, moderately arching; leaf base 1–1.20 m long, forming a prominent crownshaft, uniformly pale yellow to greenish yellow, glabrescent but with some persisting appressed white scale-like hairs; petiole 12–45 cm long, pale yellow aging to brown; rachis 2–3 m long, dotted with tiny brown scale-like hairs; pinnae 26–30 on each side of rachis, median
5. Pale greenish yellow crownshaft of *Chambeyronia macrocarpa* var. *hookeri*, cultivated in Ba, New Caledonia, 1996.
7. Fruits of *Chambeyronia macrocarpa* var. *hookeri* (top) and *C. macrocarpa* var. *macrocarpa* (bottom). Note the fewer but wider and more stout fibers adnate to the seed in var. *hookeri*. Cultivated, Floribunda Palms and Exotics, Kurtistown, Hawai‘i.

Pinnae 0.9–1.1 m x 3–9 cm, a prominent midrib and 1 marginal nerve on either side, glabrous except for scattered, medifixed, brown ramenta along midrib abaxially. Inflorescences 2–6, 70–80 cm diam., branched to 3 orders; peduncle 10–15 cm long; prophyll 62–92 cm long, first peduncular bract 65–85 cm long; rachis 40–70 cm long; rachillae 15–75 cm long, strongly flexuose, dotted with minute greyish scale-like hairs. Flowers in triads in proximal 1/3–2/3 of rachillae, distally only dyads of staminate flowers. Fruits 4.5–5.3 × 2.4–2.6 cm, elongate-ellipsoid with apical stigmatic remains, red, with fewer but wider and more stout fibers adnate to endocarp.

**Etymology:** The epithet *hookeri* likely refers to Joseph Dalton Hooker (1817–1911), 19th-century British botanist and explorer, who, along with George Bentham (1800–1884), another British botanist of roughly the same era, developed a system for classifying seed plants and published it in their epic *Genera Plantarum* in which they likely alluded to *Chambeyronia hookeri* under the name *Kentiopsis species diversa* (Beccari 1920).
Distribution and ecology: *Chambeyronia macrocarpa* var. *hookeri* is restricted to central-eastern New Caledonia where it is common in rain forests on schistose rocks at low elevations (0–500 m), especially near rivers.

Notes: This distinctive taxon had been originally described as a separate species, *Chambeyronia hookeri*, and then later placed in synonymy with *C. macrocarpa*. We resurrect it here as a variety. Its uniform, pale yellow crownshaft, petioles, upper trunk, and prophyll of the inflorescence are unmistakable. This variety is not nearly as robust, vigorous, and tall as var. *macrocarpa*. It is probably the third most common variety in cultivation and was once highly sought for its unique pale yellow coloration. Hodel and Pintaud (1998, p. 83, figs. 35 B–C) illustrated this variety.

*Chambeyronia macrocarpa* var. *hookeri* differs from *Chambeyronia macrocarpa* for its pinnae markedly paler abaxially than adaxially; larger, more elongated fruits; larger staminate flowers with fewer stamens; and the unusual, profoundly cupular fruiting perianth not widened at the mouth (Beccari 1920).

When Beccari (192) named *Chambeyronia hookeri*, he used as the type Balansa 1958 “ex parte,”, which Hodel and Moya López (2021) designated as the lectotype. At the same time, Beccari (1920) listed *Kentia lindenii* as a synonym of *C. macrocarpa* and *C. hookeri*, which could create a sticky and troublesome nomenclatural problem although in the text he explains its status and his apparent reason for listing it as such. He explained that fruits of *C. hookeri* were sold under the name *K. lindenii* in European horticulture, which seemed to be the only reason he was also listing the name under *C. hookeri*; so, likely his intent was not really to confer the status of *K. lindenii* as a formal synonym of *C. hookeri*. The type illustration of a juvenile potted plant of *K. lindenii* and accompanying description are hardly diagnostic and do not clearly depict Beccari’s *C. hookeri*.

Beccari (1920) also listed *Kentia lucianii* as a synonym of *Chambeyronia hookeri*, potentially setting up the same nettlesome situation as occurred with *K. lindenii*. However, some relief is likely in order because Beccari qualified his listing of *K. lucianii* with the words “*forsan etiam*,” meaning may also or perhaps, which discounts its status as a synonym. The description accompanying the type illustration of *Kentiopsis lucianii* (Rodigas 1882) notes that the petioles of the young juvenile plants are yellowish (a distinctive feature of *C. hookeri* in the seedling stage) yet this character is not evident in the illustration.

8. Holotype of *Chambeyronia macrocarpa* var. *roxanniae*, Pintaud 308, at P (P 00192626), showing leaf base with persistent, grayish indumentum.
Chambeyronia macrocarpa var. roxanniae Hodel & Pintaud var. nov. Fig. 8.


This variety is distinctive in the persistent, grayish indumentum of the crownshaft, the canopy of few leaves with wide pinnae, the relatively short but robust trunk, and the large, elongate fruits.

Solitary, stout tree palm. Trunk 3–10 m tall, 18–27 cm diam., green distally, browning proximally, leaf scars distinct but not prominent. Leaves 6–8, spreading, moderately arching, newly unfolding red; leaf base 1.30 m long, forming a prominent crownshaft, green dotted with yellow and covered by a dense and persistent indumentum of appressed white hairs; petiole 50 cm long; rachis 3 m long; pinnae 30–35 on each side of rachis, median ones 85–90 x 5–10 cm, a prominent midrib and 1 marginal nerve on either side, glabrous except for scattered, medifixed, brown ramenta along midrib abaxially. Inflorescences 2–3, 70–80 cm diam., branched to three orders; peduncle 8 cm long; rachis 40–50 cm long; rachillae 20–30 cm long, moderately to strongly flexuose. Flowers in triads in proximal half and dyads of staminate flowers in distal half. Fruit ellipsoidal, with apical stigmatic remains, 5–6 x 3–3.5 cm, red.

Etymology: The epithet honors Raymond Lavoix’s daughter, Roxanne, and follows the informal name given to this palm by her father, an active and productive palm enthusiast in Nouméa.

Distribution and ecology: Restricted to the eastern base and lower slopes (0–500 m elev.) of the Mont Panié massif, Chambeyronia macrocarpa var. roxanniae occurs in rain forest on schistose rocks, usually near streams and other water-collecting topographic features, where it forms isolated groups of a few individuals.

Notes: This variety is relatively short, not exceeding 10–12 m tall, but the trunk is very thick, approaching 30 cm in diameter, giving the palm an especially stout appearance. This species has a peculiar habit because its canopy or crown is composed of few leaves but with wide pinnae. The persistent, greyish indumentum of the crownshaft and very large, elongate fruits are also characteristic. At the seedling stage, this variety can be recognized by the purple color of the rachis of bifid leaves. Hodel and Pintaud (1998, p. 83, fig. 35A) illustrated this variety.

Additional specimens examined: Galarino, 10 m elev., 12 Sep. 1966, Mackee 15633, 12 May 1971, Mackee 24435 (K 000113613, NY 02325474-02, NY 02325474-03, P 00192672, P
Chambeyronia macrocarpa var. viridis Hodel & Pintaud var. nov. Fig. 9.

Type: New Caledonia [Province Sud], “Mé Ori; crête entre la haute Boghen et la haute Kouaoua, au-dessus de Katrikoin, pente sud. Forêt humide,” 600 m elev., 26 May 1965, MacKee 12688 (holotype P 00192690; isotypes P 00192691, K).

This variety is distinctive in its new leaf unfolding green, slender habit, narrow pinnae, and small fruits.

Solitary tree palm. Trunk rather slender and somewhat flexuose, to 15 m tall, 20 cm diam., green distally, brownish proximally, leaf scars distinct but not prominent. Leaves ca. 10, spreading and slightly arching, newly unfolding light green; leaf base 90–95 cm long, forming a prominent, cylindrical crownshaft, dark green with scattered spots of light green; petiole 15–25 cm long; rachis ca. 3 m long; pinnae 28–30 on each side of rachis, median ones 80 × 4–5.5 cm, a prominent midrib and 1 marginal nerve on either side, glabrous except for scattered, medifixed, brown ramenta along midrib abaxially. Inflorescence 2–3, 70–80 cm wide, branched to 3 orders; peduncle 10–15 cm long; rachis 30–40 cm long; rachillae 15–50 cm long, moderately to strongly flexuose. Flowers in triads in proximal 1/3 to 4/5, distally only dyads of staminate flowers. Fruits ca. 4 × 2.5 cm, ellipsoid to obovoid, with apical stigmatic remains, red.

Etymology: The epithet viridis is the Latin for green, and here refers to the green newly expanding leaf, unlike the red newly expanding leaf in all other varieties.

Distribution and Ecology: Chambeyronia macrocarpa var. viridis is restricted to gallery forests on schistose rocks at the base of Me Ori in central-western New Caledonia, at 500–600 m elevation, where it forms gregarious populations.

Notes: This variety is apparently extremely localized because it is known only from a single locality near the village of Katrikoin. It is distinctive by its rather slender habit, more or less flexuose trunk, relatively narrow pinnae, and relatively small fruits. The fact that it does not produce a red new leaf, unlike the other varieties, makes it less attractive for cultivation. Indeed, it is probably the least cultivated of the varieties.

Hodel and Pintaud (1998, pp. 81, 83, figs. 34A, C, 35D) illustrated this variety.

Additional Specimen Examined: Lower slopes of Me Ori above Katrikoin, 500 m elev., 21°31'S, 165°40'E, 3 May 1996, Pintaud & Doyle 361 (K 000520090, NY 02325478-02, NY 02325478-03).
In Memoriam

This paper is dedicated to my late colleague, the extraordinary and brilliant botanist Jean-Christophe Pintaud, co-author of this paper (Fig. 10). We enjoyed numerous educational, rewarding, and happy sojourns together observing, collecting, and discussing palms in the wild, especially in New Caledonia but also in Colombia, Spain, and California (see Hodel 2015). Although we initiated this paper well before his death in 2015, it is only now that I have been able to complete it, the impetus being recent work I have conducted with others in Chambeyronia and its subtribe Archontophoenicinae in New Caledonia. During such work memories of Jean-Christophe were always foremost in my mind.

Acknowledgements

We thank Michael Grayum and Celio E. Moya López for assistance with nomenclature and typification and guidance through the Byzantine minefield that is the International Code of Botanical Nomenclature; William Baker for locating and photographing specimens at K; Suchin and Jeff Marcus of Floribunda Palms and Exotics in Hawai’i for sharing information about Chambeyronia macrocarpa var. hookeri; and the herbaria BH, K, NY, NOU, and P for making information and/or digital images available from their collections. Moya López also reviewed this manuscript and made helpful suggestions.

Literature Cited


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Jean-Christophe Pintaud was an extraordinary and brilliant botanist who specialized in the palms of New Caledonia and South America. He passed away in 2015.

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