

A Revision of the Large-Flowered Group of *Basselinia* Vieill. sect. *Taloua* H. E. Moore & Uhl (Arecaceae)

Authors: Pintaud, Jean-Christophe, and Stauffer, Fred W.

Source: Candollea, 66(1) : 147-154

Published By: The Conservatory and Botanical Garden of the City of Geneva (CJBG)

URL: <https://doi.org/10.15553/c2011v661a17>

The BioOne Digital Library (<https://bioone.org/>) provides worldwide distribution for more than 580 journals and eBooks from BioOne's community of over 150 nonprofit societies, research institutions, and university presses in the biological, ecological, and environmental sciences. The BioOne Digital Library encompasses the flagship aggregation BioOne Complete (<https://bioone.org/subscribe>), the BioOne Complete Archive (<https://bioone.org/archive>), and the BioOne eBooks program offerings ESA eBook Collection (<https://bioone.org/esa-ebooks>) and CSIRO Publishing BioSelect Collection (<https://bioone.org/csiro-ebooks>).

Your use of this PDF, the BioOne Digital Library, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Digital Library content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne is an innovative nonprofit that sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

A revision of the large-flowered group of *Basselinia* Vieill. sect. *Taloua* H. E. Moore & Uhl (Arecaceae)

Jean-Christophe Pintaud & Fred W. Stauffer

Abstract

PINTAUD, J.-C. & F. W. STAUFFER (2011). A revision of the large-flowered group of *Basselinia* Vieill. sect. *Taloua* H. E. Moore & Uhl (Arecaceae). *Candollea* 66: 147-154. In English, English and French abstracts.

The genus *Basselinia* Vieill. is endemic to New Caledonia and currently comprises 13 species. It was divided in two sections, sect. *Basselinia* H. E. Moore & Uhl which includes 5, mostly small and often caespitose species, and sect. *Taloua* H. E. Moore & Uhl, which includes 7 large and solitary species. One species, *Basselinia glabrata* Becc., remains unplaced to section because it had been once excluded from *Basselinia* and placed in a separate genus, *Alloschmidia* H. E. Moore, prior to the sectional treatment of *Basselinia*. Section *Taloua* H. E. appears morphologically the least specialized group of *Basselinia*, and within it, the large-flowered group of species retains the most plesiomorphic characteristics, in habit, inflorescence and floral structure. This group includes three species, one newly described here, *Basselinia moorei* J.-C. Pintaud & F. W. Stauffer, and two others, *Basselinia velutina* Becc. and *Basselinia sordida* H. E. Moore. Morphology, ecology and distribution of these species are addressed here.

Key-words

ARECACEAE – *Basselinia* – New Caledonia – Taxonomy

Résumé

PINTAUD, J.-C. & F. W. STAUFFER (2011). Révision du groupe à grandes fleurs de *Basselinia* Vieill. sect. *Taloua* H. E. Moore & Uhl (Arecaceae). *Candollea* 66: 147-154. En anglais, résumés anglais et français.

Le genre *Basselinia* Vieill. est endémique de la Nouvelle-Calédonie et comprend actuellement 13 espèces. Il a été divisé en deux sections, sect. *Basselinia* H. E. Moore & Uhl, qui comprend cinq petites espèces souvent caespitoses, et sect. *Taloua* H. E. Moore & Uhl, qui comprend sept grandes espèces monocaules. Une espèce, *Basselinia glabrata* Becc., n'est pas placée dans une section car elle a été transférée dans un genre distinct, *Alloschmidia* H. E. Moore, ensuite réduit en synonymie de *Basselinia*. D'un point de vue morphologique, la section *Taloua* est la moins spécialisée du genre *Basselinia*, et en son sein, le groupe d'espèces à grandes fleurs conserve les caractères les plus plésiomorphes en ce qui concerne le port, la structure inflorescentielle et florale. Ce groupe inclut trois espèces, dont une nouvelle décrite ici, *Basselinia moorei* J.-C. Pintaud & F. W. Stauffer, ainsi que deux autres, *Basselinia velutina* Becc. et *Basselinia sordida* H. E. Moore. La morphologie, l'écologie et la distribution de ces espèces sont données pour toutes ces espèces.

Addresses of the authors: JCP: Institut de Recherche pour le Développement (IRD), UMR DIADE/DYNADIV, BP 64501, 34394 Montpellier Cedex 5, France.

Email (JCP): jean-christophe.pintaud@ird.fr

FWS: Conservatoire et Jardin botaniques de la Ville de Genève, Université de Genève, laboratoire de systématique végétale et biodiversité, CP 60, 1292 Chambésy/GE, Switzerland

Submitted on July 8, 2010. Accepted on December 23, 2010.

Edited by P. Bungener

Introduction

The genus *Basselinia* Vieill. is endemic to the island of New Caledonia, where it is found in all rainforest habitats, from sea-level to the top of the highest mountains, above 1600 m elevation. *Basselinia* is the largest genus of subtribe *Basselininae* J. Dransf. & al., tribe *Areceae* Mart., with 13 species (DRANSFIELD & al., 2008; PINTAUD & BAKER, 2008). The subtribe *Basselininae* is composed of 6 genera and is restricted to the SW Pacific, from Bismarck Archipelago to Fiji islands in the Outer Melanesian Arc (with *Physokentia* Becc. and *Cyphosperma* Hook. f.), and in New Caledonia (*Basselinia* Vieill., *Burretiokentia* Pic. Serm., *Cyphophoenix* Hook. f. and *Cyphosperma* Hook. f.) and Lord Howe Island (*Lepidorrhachis* (H. Wendl. & Drude) O. F. Cook) in the Inner Melanesian Arc. *Basselinia* differs from the other genera of the subtribe in producing smaller fruits, with an angle of approximately 90° joining the center of the fruit to the insertion of the embryo and to the stigmatic residue (120° or 180° in the other genera, which generally have basal embryos and apical or excentrically apical stigmatic residues).

The genus *Basselinia* is complex and its taxonomy remains confused. While BECCARI (1920) and MOORE & UHL (1984) recognized about the same number of species in the genus, 10 and 11, respectively, their taxonomic treatments differ considerably, even in the delimitation of the genus. One species was included in the genus *Cyphokentia* (*C. humboldtiana* Brong.) by Beccari, but was transferred to *Basselinia* by Moore and Uhl. Beccari described four new species in the genus, among them *B. glabrata* Becc., that Moore and Uhl transferred to a new, monotypic genus, *Alloschmidia* H. E. Moore. The last authors described five new species of *Basselinia* and divided the genus in two sections, sect. *Basselinia* H. E. Moore & Uhl and sect. *Taloua* H. E. Moore & Uhl. Section *Basselinia* included four, mostly small and often caespitose species (one described as new), with frequently bifid or irregularly divided leaves. In the treatment of MOORE & UHL (1984), the concept of the lectotype of the genus, *B. gracilis* Vieill., is very broad and includes in synonymy three species considered distinct by Beccari (*B. billardieri* (Brong.) Becc., *B. eriostachys* Becc. and *B. heterophylla* Becc., the last described as new). In many respects, sect. *Basselinia* seems to be the most specialized group within the genus *Basselinia*. Trends of miniaturization in habit, flower and fruit, and stem ramification that characterize section *Basselinia* are unique among New Caledonian *Areceae*, and seem to be linked to an ecological radiation (PINTAUD 2006). PINTAUD & BAKER (2008) considered a narrower concept of *Basselinia gracilis*, revalidating *B. eriostachys*. Section *Taloua* includes 7 larger and always solitary palms, with regularly divided leaves. MOORE & UHL (1984) described four new species in this section. Finally PINTAUD & BAKER (2008) reintegrated *Alloschmidia* in *Basselinia*, and discussed the

significance of the unique and shared characters of *B. glabrata*. However, internal relationships in *Basselinia* remain confused, and *B. glabrata* could not be placed in a section. This most recent treatment recognizes 13 species of *Basselinia*.

MOORE & UHL (1984) considered *Basselinia velutina* Becc. as the least specialized species in the genus, because of its large staminate flowers, fruit with stigmatic remains near the middle and prophyll sometimes completely encircling the peduncle. The significance of the complete or incomplete prophyll in *Basselininae* has been discussed in detail by PINTAUD & BAKER (2008). MOORE & UHL (1984) described a new species with large staminate flowers, *B. sordida* H. E. Moore, closely related to *B. velutina*. Here we describe a third species in this group, which we call the large-flowered group of *Basselinia* sect. *Taloua*. Flower size in species of *Basselinia* is reported in Table 1.

Table 1. – Flower size in *Basselinia* species. Length refers to bud length just prior to anthesis (data from MOORE & UHL, 1984 and present study).

Species	Staminate flower length [mm]	Pistillate flower length [mm]
<i>B. velutina</i> Becc.	5	5
<i>B. moorei</i> J.-C. Pintaud & F. W. Stauffer	5-6	4-5
<i>B. sordida</i> H. E. Moore	3.2-4	4-5
<i>B. favieri</i> H. E. Moore	3-4	5
<i>B. iterate</i> H. E. Moore	3	4.5
<i>B. porphyrea</i> H. E. Moore	3	5
<i>B. tomentosa</i> Becc.	2	3.5
<i>B. glabrata</i> Becc.	2	3
<i>B. humboldtiana</i> (Brongn.) H. E. Moore	1.75-2	4
<i>B. deplanchei</i> Vieill.	1.5-1.6	2-2.5
<i>B. vestita</i> H. E. Moore	1.5	1.8
<i>B. gracilis</i> Vieill.	1.2-1.6	2.5
<i>B. pancheri</i> (Brongn. & Gris) Vieill.	1-1.5	1.4

Taxonomic treatment

Basselinia velutina Becc., *Palme* Nuova Caledonia: 75. 1920.

Typus: NEW CALEDONIA: without locality, *Pancher s.n.* (holo-: FI-BECC!; iso-: P!).

Solitary, monoecious, unarmed, pleonanthic tree *palm*. *Stem* 6-12 m tall, ca. 15 cm dbh, enlarged to 22 cm diam. at base, brown to grey, with slightly to moderately prominent leaf scars. *Leaves* 10-12, arcuately spreading, regularly pinnate. *Leaf sheath* caducous, forming a loose, largely open, to prominent and tight, cylindrical crownshaft, covered abaxially with a dense and short indument of red-brown to grey floccose scales, 0.6-1 m long; petiole concave adaxially, more or less winged by sheath extensions, 4-35 cm long; rachis slightly to strongly recurved, 2.15-3 m long; pinnae 33-45 on each side, regularly

arranged, stiff, directed forward and upward, light green; medifixed or longifixed rammenta abundant on nerves abaxially, especially on midrib, all along the pinna; basal pinnae ca. 50×0.4 –1 cm, median pinnae 1.1–1.35 m long \times 2.8–6 cm wide, apical pinnae ca. 45×1 –2.5 cm. *Inflorescences* 1–4 simultaneously, infrafoliar, to 1.1 m long; pendulous, covered with a short, velutinous indument of grey scales; peduncle 7–15 cm long, flattened; prophyll completely or incompletely encircling peduncle at insertion, 65–74 cm long; peduncular bract to 84×15 cm, thick, woody, prominently rostrate, covered outside with a \pm persistent indument of grayish or reddish-brown scales; rachis 21–34 cm long, with 10–16 first-order branches; rachillae 30–66 cm long and 5–7 mm diam. *Staminate flowers* 7–8 mm long; 6–7 mm diam. at anthesis, pale brown; sepals 4 mm long, 3–4 mm wide, ovate-oblong, slightly acute towards the apex, strongly keeled, distinct, imbricate; petals 3.8–4 mm long, 3–4 mm wide, elliptic, glabrous and extremely thick, connate up to mid-height, valvate at the apex; stamens 6, 6–7 mm long, filaments 6 mm long, 0.9–1 mm diam., connate at the base for 3 mm, cylindrical, with an extremely thin apex; anthers 2 mm long, 1 mm wide, dorsifixed, bifid at the base and apex, latrorse; pistillode 4 mm long, 2 mm diam. at mid-height, with no stigmatic branches differentiated; ovoid to ovoid-oblong. *Pistillate flowers* 5–6 mm long, 4 mm diam. in late bud, borne throughout the rachillae or almost completely absent and then the whole inflorescence staminate; sepals 3.5–4 mm long, 3.5–4 mm wide, oblong, only shortly connate at the base, imbricate; petals 4 mm long, 3.8–4 mm wide, distinct, imbricate except for the briefly valvate apices; staminodes 1–3 at one side of the gynoeceum, shortly connate at the base, 1.5–1.7 long, 0.8–1 mm wide at the base, acute at the apex; tooth-like; gynoeceum syncarpous, 5 mm long, 3.8–4 mm diam., ovoid-oblong, 3-locular; stigmas 3, prominent, recurved, densely covered with long papillae on the ventral side. *Fruit* ellipsoid to subglobose, black at maturity, 11 – 13×9 – 10 mm, with stigmatic remains between middle and 1/3 from base.

Common name. – Not reported.

Distribution and ecology. – Widespread but patchily distributed in the mountains of New Caledonia at middle elevation (400–1000 m), where it is found exclusively in primary rain forest (Fig. 3). In north-eastern and central New Caledonia, this species is restricted to schistose rocks, while in the south of the island, it occurs on ultrabasic rocks. This species tends to be gregarious where it grows, and reaches or exceeds the forest canopy. It has been considered to grow also at high elevation in north-eastern New Caledonia (MOORE & UHL, 1984; HODEL & PINTAUD, 1998), but these cloud-forest populations appeared to belong to *B. moorei*, newly described here.

Other specimens studied. – **NEW CALEDONIA:** Haute Neuménie, canopy component of rain forest on oxydic alluvium along the river, 650 m, 2.VI.1996, Hodel & Pierson 1500 (NOU, NY, P); Plateau de Dogny, 900–1000 m, 10.IX.1958, MacKee 6573 (K); Katrikoin (Haute

Boghen), exploitation forestière Launay, 400–500 m, 17.VI.1965, MacKee 12808 (K, P); Farino, Pic Vincent, 650 m, 10.IV.1973, MacKee 26531 (BH, K, P); Plateau de Dogny, 1000 m, 22.IV.1980, MacPherson 2608 (BH, K, MO, NOU, P); east slopes of Mont Panié on trail from Tiaot to summit, about 500 m, 23.VI.1971, Moore, Brinon, Schmid & Veillon 9964 (BH, K, NOU, P); Katrikoin (Haute Boghen), 440 m, 2.VII.1971, Moore, Brière, Gay & Lavoix 9972 (BH, K, NOU); Mont Panié, ca. 500 m, 6.XI.1978, Moore 10463 (BH, K); Mont Panié, sentier de Tao au sommet, 700 m, 20.IX.1995, Pintaud 283 (K, NY); Mont Panié, sentier de Tao au sommet, 800 m, 5.VI.1996, Pintaud & Hodel 365 (P); bassin supérieur de la Boghen, vers 500 m, 13.XII.1967, Schmid 2561 (BH).

Notes. – Although the type lacks indication of locality, the collections made by Pancher (apparently with Lécarré) are known to come from central-western New Caledonia. The recently discovered population of the upper Neuménie valley, in south-eastern New Caledonia, although geographically isolated and growing on a different substrate, does not show significant morphological difference with the central and north-eastern populations (HODEL & PINTAUD, 1998).

Basselinia sordida H. E. Moore in Allertonia 3: 361. 1984.

Typus: **NEW CALEDONIA:** north slopes and ridge of Petit Boulinda 1010–1100 m, 13.X.1972, Moore, Jaffré, Latham & Schmid 10072 (holo-: BH!; iso-: NOU!).

Solitary, monoecious, unarmed, pleonanthic tree *palm*. *Stem* 6–12 m tall, 10–15 cm dbh, brown to grey, with prominent leaf scars. *Leaves* (7-)10–12, ascending to arcuately spreading, regularly pinnate. *Leaf sheath* caducous, forming a prominent and tight, cylindrical to swollen crownshaft, covered abaxially with a dense and short brownish-grey tomentum, 0.6–0.7 m long; petiole concave adaxially, more or less winged by sheath extensions, 15–20 cm long; rachis slightly to strongly recurved, 1.8–2.1 m long; pinnae (25-)30–35 on each side, lanceolate-terete, regularly arranged, moderately stiff, often curled apically, directed forward and upward, glossy dark green; nerves punctuated or covered by minute scales abaxially, with sparse to abundant, small longifixed or medifixed rammenta all along except on tip; basal pinnae 28 – 32×0.6 – 0.7 cm, median pinnae 60 – 90×3 – 5 cm wide, apical pinnae ca. 25×1.7 – 2.5 cm. *Inflorescences* 1–4 simultaneously, infrafoliar, to 80 cm long and 90 cm wide; stiffly spreading to moderately pendulous, covered with a dense, short, white, hairy-scaly indument; peduncle 7–12 cm long and 4–5 cm wide, flattened; prophyll incompletely encircling peduncle at insertion, slightly shorter than peduncular bract, this 50–60 cm long, thin, chartaceous, rostrate, covered outside by a short whitish-greyish tomentum of appressed scales, glabrous inside; rachis ca. 14 cm long, with 10–15 first-order branches; rachillae 30–45 cm long and (3-)4–5 mm in diameter. *Staminate flowers* 3.2–4 mm long; 3.3–4 mm diam. at late bud; sepals 1.8–2 mm long, 1.5–1.9 mm wide, circular-oblong, rounded towards the apex, distinct,

imbricate; petals 3.1-3.3 mm long, 2-2.2 mm wide, elliptic, glabrous, slightly connate at the base, valvate at the apex; stamens 6, 3 mm long, filaments 2 mm long, 0.3 diam., cylindrical, basally connate, apically connecting to the anther through a 1 mm long, flat articulation; anthers 2 mm long, 1 mm wide, dorsifixed, bifid at the base and apex, latrorse; pistillode 2.1-2.3 mm long, 1 mm diam. at mid-height, with no stigmatic branches differentiated; ovoid-oblong. *Pistillate flowers* 4 mm long, 3.5 mm diam. in late bud, borne throughout the rachillae, supported with a short stalk; sepals 3-4 mm long, 3-3.5 mm wide, almost circular, only shortly connate at the base, imbricate; petals 4 mm long, 3-3.2 mm wide, slightly connate at the base, imbricate but open at the apex; staminodes 3 at one side of the gynoecium, shortly connate at the base, 1-2 long, 0.5-0.8 mm wide at the base, acute at the apex; tooth-like; gynoecium syncarpous, 3.8 mm long, 3.5 mm diam., ovoid, 3-locular, ovary wall thickened towards the apex; stigmas 3, thick and elongated, recurved covered with short papillae on the ventral side. *Fruit* subglobose, wider than high 10 × 11 mm, with stigmatic remains in upper 1/3, mature color unknown.

Common name. – Not reported.

Distribution and ecology. – Widespread but patchily distributed on the ultrabasic mountains of New Caledonia at high elevation (1000-1500 m) (Fig. 3), where it is found exclusively in primary cloud forest. This species tends to be gregarious where it grows, and reaches or exceeds the forest canopy. Although thought initially to be restricted to two nearby ultrabasic massifs of central-western New Caledonia (Mé Maoya and Boulinda), it has been subsequently collected or sighted farther north and east (Tchingou massif) and also in the southern massif, both on the western side (Dent de Saint Vincent, Pic du Rocher) and on the eastern side (Haute Neuménie). It is absent from the North East due to lack of ultrabasic substrate in this sector.

Other specimens studied. – NEW CALEDONIA: cuvette sur le flanc est du Mont Xé Ré Mwé, 1100 m, 8.VI.1996, *Hodel & al. 1510* (NOU, NY, P); Mont Boulinda, pente nord, 1150-1300 m, 28. VIII. 1967, *MacKee 17367* (K, P); contrefort ouest du Mé Maoya, au-dessus de la mine Emma, 1350-1500 m, 13.I.1970, *MacKee 21408* (K, P), *21415* (K, P); Mont Boulinda, crête du sommet sud, 1200 m, 31.VII.1973, *MacKee 27077* (BH, K, P); ridge of Mé Maoya, above mine Emma, 1300 m, 10.IV.1980, *Moore & MacPherson 10553* (BH, NOU); Massif du Tchingou 1180 m, 13.XII.1983, *Morat 7664* (K, NOU); Mé Maoya, upper Nodela valley, 1000 m, 19.III.1996, *Pintaud & al. 329* (P), *336* (K), *337* (NY); Mé Maoya au-dessus de la mine Emma, 1300 m, 7.II.2000, *Pintaud & Tivollier 565* (G, P); Mé Maoya vers 1350-1400 m, 7.II.2000, *Schmid 3000* (BH); Massif du Tchingou vers 1250 m, 10.XII.1986, *Veillon 6122* (K, NOU).

Notes. – This species is readily distinguished by its peculiar bright-white to yellowish-white indument on inflorescences, and shows almost no variation over its extended and disjunct range.

Basselinia moorei J.-C. Pintaud & F. W. Stauffer, *spec. nova* (Fig. 1, 2)

Typus: NEW CALEDONIA: Mont Panié, 1080 m, 4.X.1978, *Moore & Morat 10403* (holo-: BH!; iso-: NOU!).

Haec species hactenus cum B. velutinae confusa, sed pinis proximalibus vix ramentaceis, inflorescentiis cum rachilla fere dimidio curtior, fructibus maturis miniatis differt.

Solitary, monoecious, unarmed, pleonanthis tree *palm*. *Stem* 6-10 m tall, 10-15 cm dbh, brown to grey, with slightly to moderately prominent leaf scars. *Leaves* 8-10, arcuately spreading, regularly pinnate. *Leaf sheath* caducous, forming a loose to rather prominent, somewhat swollen crownshaft, covered abaxially with a dense and short brown or grey tomentum, 0.5-0.7 m long; petiole concave adaxially, prominently winged by sheath extensions, 15-20 cm long; rachis slightly to strongly recurved, 1.6-1.9 m long; pinnae 25-35 on each side, regularly arranged, moderately stiff, directed forward and upward, light green; medifixed or longifixed ramenta scarce, restricted to the base of nerves abaxially; basal pinnae 38-40 × 2 cm, median pinnae 64-66 × 4 cm wide, apical pinnae ca. 40-42 × 2 cm. *Inflorescences* 1-3 simultaneously, infrafoliar, to 50 cm long and 60 cm wide; stiffly spreading, divaricate, covered with a velutinous, brownish-grey, hairy-scaly indument; peduncle 10-12 cm long, flattened; prophyll incompletely encircling peduncle at insertion, peduncular bract rostrate; rachis ca. 10 cm long, with 5-10 first-order branches; rachillae 20-36 cm long. *Staminate flowers* 5-6 mm long; 4.5-5 mm diam. at late bud; sepals 3.5-3.8 mm long, 2.5 mm wide, ovate-oblong, slightly acute towards the apex, distinct, imbricate, strongly cucullate at early bud stage; petals 5 mm long, 3 mm wide, elliptic, glabrous, connate up to mid-height, valvate at the apex; stamens 6-7, 3.5-4 mm long, filaments 2 mm long, 1 mm diam., connate at the base for 2 mm, cylindrical, apically connecting to the anther through a 1 mm long, laminar articulation; anthers 2 mm long, 1 mm wide, dorsifixed, bifid at the base and apex, latrorse; pistillode 2.5-3 mm long, 2 mm diam. at mid-height, ovoid, with no stigmatic branches differentiated. *Pistillate flowers* 4-5 mm long, 4 mm diam. in late bud, borne throughout the rachillae, supported with a short stalk; sepals 3.8-4 mm long, 3.5-3.8 mm wide, circular-oblong, only shortly connate at the base, distinct, imbricate; petals 3.8-4 mm long, 3.6-3.8 mm wide, distinct, imbricate but open at the apex; staminodes 3-6 at one side of the gynoecium, shortly connate at the base, 1.2 long, 1 mm wide at the base, acute at the apex; tooth-like; gynoecium syncarpous, 3.5-3.8 mm long, 3.5 mm diam., globose, 3-locular; stigmas 3, poorly differentiated, recurved, shortly papillate on the ventral side. *Fruit* globose, 13 mm diam., bright red at maturity, with lateral stigmatic remains.

Common name. – Not reported.



Fig. 1. – Habit and vegetative morphology of *Basselinia moorei* J.-C. Pintaud & F. W. Stauffer. **A.** Habit of an individual growing in the cloud forest of Mont Panié, 1300-1600 m elevation; **B.** Detail of crownshaft and intrafoliar inflorescences; **C.** Simultaneous infructescences; **D.** Rachillae bearing ripe fruits.

[Photos: **A:** Daniel and Irène Letocard; **B:** Rémy Amice; **C-D:** Henri Leveque]

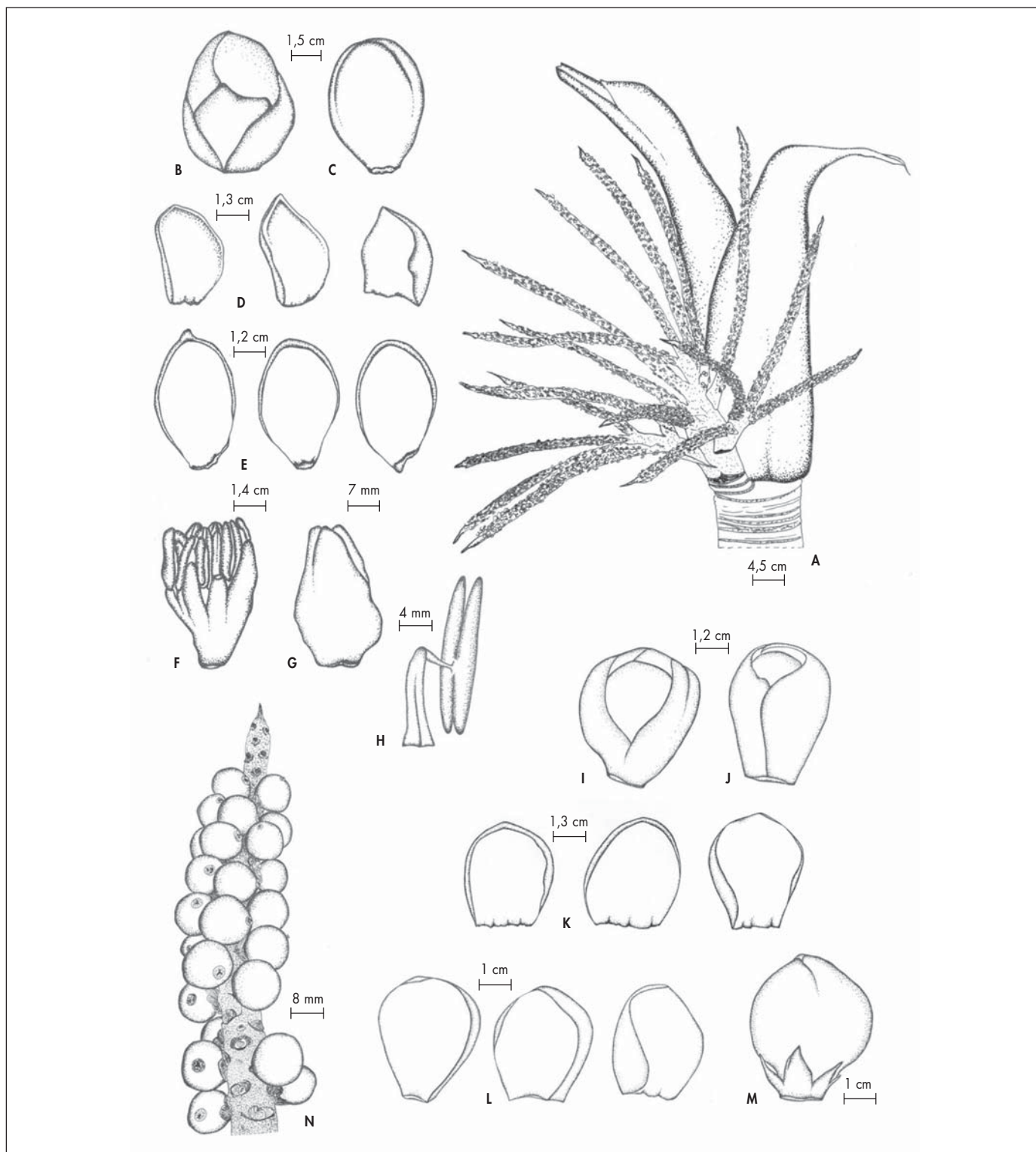


Fig. 2. – Reproductive morphology of *Basselinia moorei* J.-C. Pintaud & F. W. Stauffer. **A.** Inflorescence bearing early buds; **B.** Late male bud; **C.** Male bud with calyx removed; **D.** Sepals in ventral view; **E.** Petals in ventral view; **F.** Androecium at bud stage showing inflexed anthers; **G.** Pistillode from side view; **H.** Stamen showing the flattened articulation connecting the filament to the anther; **I.** Late female bud; **J.** Female bud with calyx removed; **K.** Sepals in ventral view; **L.** Petals in ventral view; **M.** Syncarpous gynoecium from side view; **N.** Fruits showing mid-height stigmatic remains.

[**A, N:** Munzinger 3401, P; **B-M:** Moore & Morat 10403, BH] [Drawings J.-C. Pintaud & F. W. Stauffer]

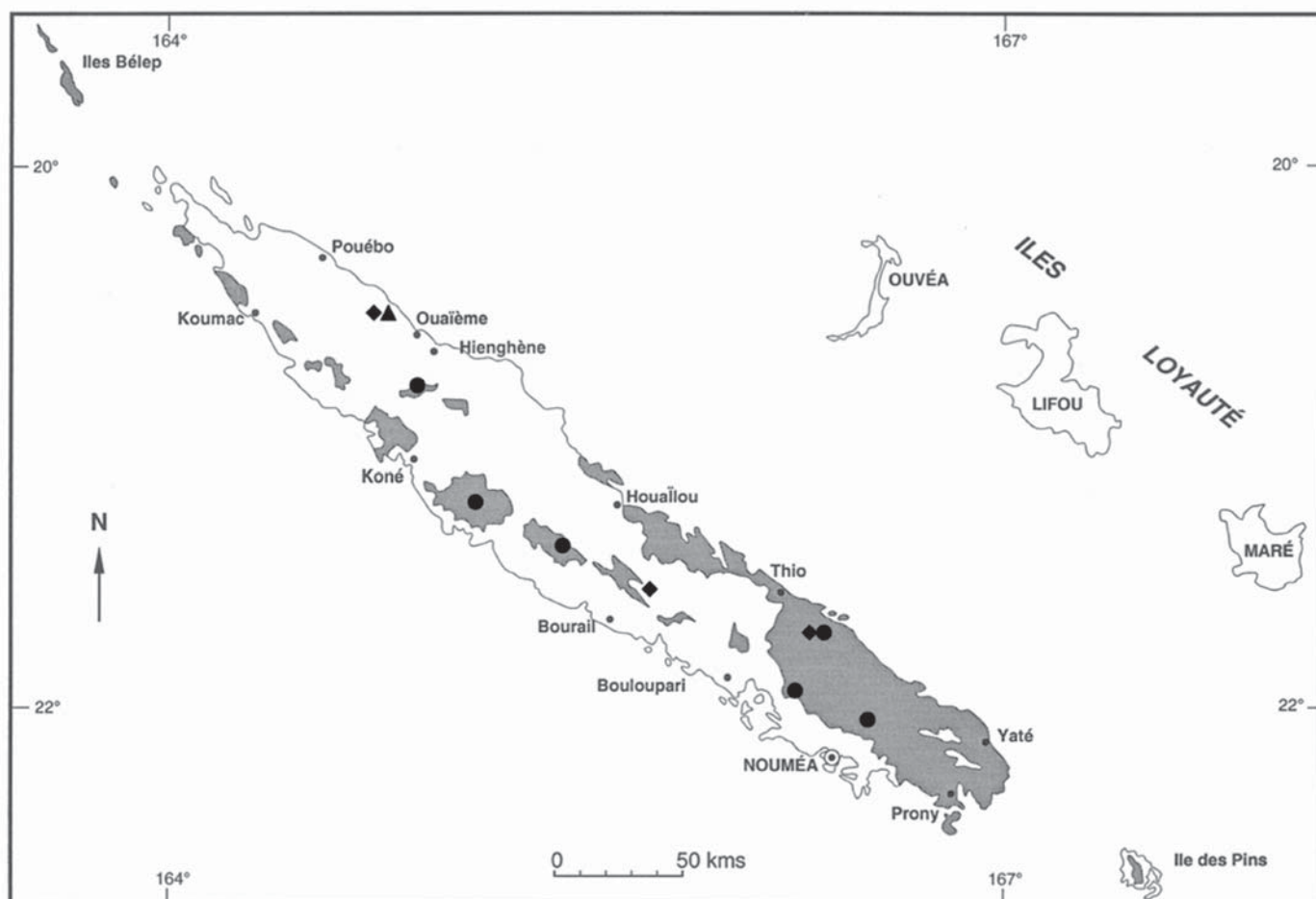


Fig. 3. – Distribution map of the large-flowered species of *Basselinia* sect. *Taloua* H. E. Moore & Uhl in New Caledonia: *Basselinia velutina* Becc. (rhomboids); *B. sordida* H. E. Moore (circles); *B. moorei* J.-C. Pintaud & F. W. Stauffer (triangle).

Distribution and ecology. – Only known from the upper slopes of Mont Panié, above 900 m elevation on the eastern side and above 1400 m elevation on the western side, almost reaching the summit (1628 m) (Fig. 3), in cloud forest on schistose rocks, dominated by *Agathis montana* de Laub (*Araucariaceae*). The species grows abundantly as a canopy-emergent component. It replaces *Basselinia velutina*, which grows at a lower elevation on Mont Panié. *Basselinia moorei* is the fourth endemic palm species described from Mont Panié (the others are *B. favieri* H. E. Moore, *Clinosperma macrocarpa* (H. E. Moore) J.-C. Pintaud & W. J. Baker and *Kentiopsis piersoniorum* J.-C. Pintaud & Hodel), further emphasizing the significance of this mountain as a biodiversity and conservation hotspot (PINTAUD & al., 2001).

Other specimens studied. – NEW CALEDONIA: Mont Panié 900-1600 m, 31.X.2002, Mouly 337 bis, leg. Letocard (G, P); Mont Panié 1100 m, 24.IX.2004, Munzinger; Blaffard & Butin 2406 (NOU, P); Mont Panié, 1400-1500 m, 8.IV.2006, Munzinger 3401 (G, NOU, P); Mont Panié en forêt à *Agathis montana*, 1350-1650 m, 19.IX.1966, Schmid 1614 (BH).

Notes. – This species has been overlooked and confused with the co-occurring *Basselinia velutina*. However, there is very limited overlap of the two species on Mont Panié, since *B. moorei* replaces *B. velutina* above 900 m elevation. The two species are nevertheless conspicuously different in the abundance and disposition of ramenta on the abaxial side of pinnae, in inflorescence architecture and fruit color, among other characters (Table 2). Several morphological features shared by *B. moorei* and *B. sordida*, including the peculiar, flattened articulation that connects the filament to the anther, the pedicellate pistillate flower, and stigmas with short papillae, rather suggests a sister relationship of these two species, that would be edaphic vicariants within the New Caledonian cloud forests.

Acknowledgements

The authors want to thank the curators of the herbaria BH, FI, G, K, NOU, NY and P, who kindly provided specimens on loan or enabled access to their collections. They are also grateful to Jérôme Munzinger (IRD, New Caledonia), Daniel and Irène Letocard, Henri Leveque, Rémy Amice, and the Association Chambeyronia, for providing material and information on the species studied. Alain Chautems is greatly thanked for the Latin diagnosis. Patrick Perret and the team of the library of the Conservatory and Botanical Garden of Geneva kindly enabled access to their outstanding collections.

References

- BECCARI, O. (1920). *Le palme della Nuova Caledonia*. Firenze.
- DRANSFIELD, J., N. UHL, C. ASMUSSEN, W. BAKER, M. HARLEY & C. LEWIS (2008). *Genera Palmarum. The evolution and classification of palms*. Kew Publishing. Royal Botanic Gardens, Kew.
- HODEL, D. R. & J.-C. PINTAUD (1998). *The palms of New Caledonia*. Allen Press.
- MOORE, H. E. & N. W. UHL (1984). The indigenous palms of New Caledonia. *Allertonia* 3: 313-402.
- PINTAUD, J.-C. (2006). The impact of forest disturbance on the palms of New Caledonia. *Palms* 50: 123-135.
- PINTAUD, J.-C. & W. J. BAKER (2008). A revision of the palm genera (Arecaceae) of New Caledonia. *Kew Bull.* 63: 61-73.
- PINTAUD, J.-C., T. JAFFRÉ & H. PUIG (2001). Chorology of New Caledonian palms and possible evidence of Pleistocene rain forest refugia. *Compt. Rend. Acad. Sci. Paris, Sér. 3, Sci. Vie* 324: 453-463.

Table 2. – Differences between the three species of the large-flowered group of *Basselinia* sect. *Taloua*.

Character	<i>B. velutina</i> Becc.	<i>B. moorei</i> J.-C. Pintaud & F. W. Stauffer	<i>B. sordida</i> H. E. Moore
Color of pinnae	light green	light green	dark green
Ramenta on pinnae	abundant all along	scarce on proximal 1/3	abundant on proximal 4/5
Peduncular bract	thick, woody	incompletely known	thin, chartaceous
Rachillae length (max.) [cm]	66	36	45
Rachillae indument	thin, grey	thin, grey	thick, white
Filament (male fl.)	non-articulated	articulated	articulated
Pistillode (male fl.)	truncate at apex	not truncate at apex	truncate at apex
Floral stalk (fem fl.)	absent	present	present
Stigmatic branches (fem. fl.)	dense, long papillae	non-dense, short papillae	non-dense, short papillae
Staminodes (fem. fl.)	1-3	3-6	3
Fruit color	black	bright red	unknown
Fruit shape	ellipsoid	globose	subglobose, wider than high
Stigmatic remain on fruit	below middle	at middle	above middle