

Two New Species and a New Variety of Palms from New Caledonia

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We had long suspected that two red-fruited *Basselinia* from Mt. Panié and cultivated at the Lavoix family mountain house on Mt. Koghi near Nouméa were undescribed species new to science. Because they were mature and produced flowers and fruits and were easily accessible along a well-maintained road, we were able to make good collections and name, describe and document these novelties. Also, co-author Pierson had found a *Chambeyronia divaricata* with a “watermelon” (with cream-yellow longitudinally streaks) crownshaft in the Koua Valley, which we also named, described and documented as a new variety. See our article naming and describing the two new species and new variety in the online e-journal PalmArbor (Hodel & Pierson 2024).

Nouméa businessperson Lucien Lavoix, perhaps the best known collector and champion of New Caledonia palms of his era in the middle 20th century, frequently accompanied and/or was connected with well-known personages who were studying New Caledonia’s palms, including botanists and

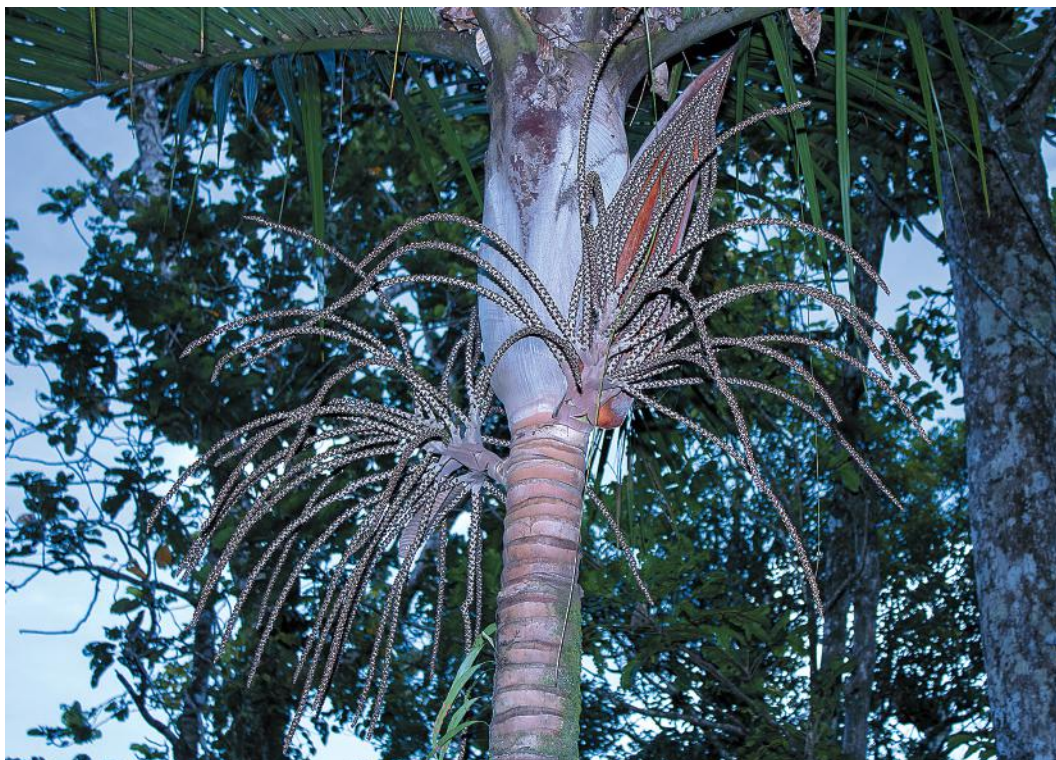
plantspeople M. Schmid, J.-M. Veillon, H. S. MacKee, T. Jaffré and L. Chavalier in New Caledonia, D. Barry of Los Angeles, California and especially H. E. Moore, Jr. of Cornell University in New York. As Lavoix traveled throughout New Caledonia with these associates, he likely mostly collected seedlings rather than seeds because the latter were typically scarce. He planted his collections along the road up to his mountain-side retreat, where most have attained maturity. Lavoix made several trips to the legendary Mt. Panié, perhaps even discovering or assisting in the discovery of the famous, elusive and rare “palmier á gros fruits,” *Lavoxia macrocarpa* (now *Clinosperma macrocarpa*), which Moore named in his honor. Two species with which

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1. A solitary habit, ringed trunk, prominent and swollen crownshaft, and handsome crown of spreading-arching pinnate leaves make *Basselinia pseudovelutina* a quintessential palm of New Caledonia. Lavoix estate, Mt. Koghi. (All photos by D. R. Hodel)



2 (top). Inflorescences of *Basselinia pseudovelutina* are erect-spreading. Lavoix estate, Mt. Koghi. 3 (bottom). Staminate flowers of *Basselinia pseudovelutina* have stamens with pinkish purple filaments and a dark pink pistillode. Lavoix estate, Mt. Koghi.

Lavoix returned from Mt. Panié were two red-fruited *Basselinia* from low and middle elevations, one with strikingly pendulous inflorescences and the other with erect to spreading inflorescences.

Because all *Basselinia* have black fruits except *B. moorei*, these red-fruited species caught the attention of co-author Pierson when he visited the Lavoix estate several times over two years. Equally important, Pierson found them both



4. *Basselinia pendulina* is another quintessential New Caledonia palm with a solitary habit, ringed trunk, prominent and swollen crownshaft and handsome crown of spreading-arching pinnate leaves. Note the pendulous inflorescences and mature, red-ripe fruits. Lavoix estate, Mt. Koghi.



5. Inflorescences and infructescences of *Basselinia pendulina* are strikingly pendulous and hang down against the trunk. Note the red fruits. Lavoix estate, Mt. Koghi.

in habitat on Mt. Panié, the one with pendulous inflorescences from 200 to 500 m elevation and the one with erect to spreading inflorescences from 300 to 800 m elevation. He compared both with *B. moorei*, the known red-fruited species, and realized they were different.

Pierson sent photographs of these two *Basselinia* species to co-author Hodel, emphasizing the differences between them and the other red-fruited *Basselinia*. Hodel immediately recognized the one with the strikingly pendulous inflorescences because he and the late Jean-Christophe Pintaud, co-author of their book, *The Palms of New Caledonia* (Hodel & Pintaud 1998), had discussed this taxon when preparing the book and uneasily referred it to *B. velutina*, based on determinations by others. Indeed, Hodel and Pintaud (1998) even illustrated this taxon with strikingly pendulous inflorescences as *B. velutina* (see p. 59, Plate 22 C).

The other red-fruited *Basselinia* with erect to spreading inflorescences seemed not so distinct and Hodel was less confident that it was a new species. Nonetheless, Pierson persisted, and the opportunity presented itself for a short, whirlwind trip from Tahiti, where Hodel was staying with family, to New Caledonia to study these palms.

The second day after Hodel's arrival in New Caledonia, we headed up to the Lavoix estate on Mt. Koghi just outside of Nouméa with Gilles' partner Ayu Warlina and Gilles' son Thomas. Several plants of the two new *Basselinia* were right along the road, making for easy collecting, which was especially helpful for Hodel, who recently had total replacement of both knees, much reducing his mobility. Also, having both new species so close to Nouméa, precluded a days-long trip to the north to Mt. Panié and an arduous climb (at least for Hodel) up this fabled mountain to observe and collect them in the wild.

Both *Basselinia* are the quintessential New Caledonia palms: A solitary habit, ringed but fairly smooth trunk, prominently swollen crownshaft, and handsome crown of spreading to arching, pinnate leaves. The first new *Basselinia* we stopped to collect was the one with erect to spreading inflorescences (Figs. 1–3). It much reminded us of *B. velutina* but differed in its leathery rather than woody peduncular bract, the shorter rachillae (52 vs. 66 cm), the articulated rather than non-articulated filaments, the non-truncate rather than truncate pistillode much shorter than the stamens, and, most conspicuously, its red rather than black fruits. Because it resembled *B. velutina*, especially when mature fruits are

6. *Chambeyronia divaricata* var. *flavolineata* is a small, solitary, few-leaved palm. Koua Valley.





7. The leaf bases of *Chambeyronia divaricata* var. *flavolineata* have cream-yellow, vertical streaks, making a mottled or "watermelon" crownshaft. Koua Valley.

lacking, which is often, we named it *B. pseudovelutina*, which means similar to or confused with *B. velutina* but different. Making the collection was fast and easy; what took time was for Hodel to take extensive notes and photographs. As Hodel did this, the others explored farther up the road to find the second new *Basselinia*, this one with pendulous inflorescences.

The second new *Basselinia* was in full, red-ripe fruit, making for a glorious sight. The strikingly pendulous inflorescences are distinctive, and immediately set it apart from all other *Basselinia* (Figs. 4 & 5). Everything about the inflorescence is pendulous, from the downward-curved peduncle to the pendulous rachis, branches, and rachillae. The narrow branch and rachillae attachment angles and their pendulous nature make the rachillae hang parallel to each other. Eventually, the entire structure hangs down against the trunk. We named this species *B. pendulina*, which means pendulous or hanging, describing the inflorescence of this species perfectly.

A question that we asked ourselves is how did two distinct *Basselinia* taxa escape detection for so long when both are along the well traversed trail up Mt. Panié, where so many palm researchers had trod over the years? Part

of the answer might be that in the past, these two new species had been confused with black-fruited *B. velutina*. But wait, black fruits are conspicuously different from red fruits, so how could they be confused? The answer to that question is that mature, ripe fruits of New Caledonia palms are scarce or even rarely encountered; thus, without the red fruits, these species could have been mistaken for *B. velutina*. Indeed, that is what Pintaud and Stauffer (2011) suggested had occurred up until they named and described the red-fruited *B. moorei* from the upper reaches of Mt. Panié, above 800 m elevation, where it, too, had escaped detection for years in a well-studied location, likely because its red fruits were seldom seen. Perhaps if these two new *Basselinia* had been encountered with mature, red-ripe fruits, they would have been recognized as different long ago and even already named and described, ending this mystery. That cultivated plants of these two species existed at the Lavoix estate on Mt. Koghi and we saw them with red fruits and knew their provenance on Mt. Panié, were sufficient for us to document them as new species. Indeed, as noted earlier, Hodel and Pintaud (1998) had recognized the *Basselinia* with pendulous inflorescences and were suspicious that others had determined it to be

8. Co-author Gilles Pierson holds the infructescence of *Chambeyronia divaricata* var. *flavolineata* heavily laden with bright red fruits. Koua Valley.



B. velutina; nonetheless, they went with determinations made by others.

Thus, we suspect that *Basselinia velutina* does not occur on Mt. Panié or, if it does, it is extremely rare. Rather, the few collections labeled as such from Mt. Panié at the herbaria at Nouméa, Paris, and Cornell University can mostly be assigned to *B. pendulina* (lower elevations), *B. pseudovelutina* (middle elevations), and *B. moorei* (upper elevations and to the summit).

The next day we were on our way north to Koua Valley on the east coast, the home of *Chambeyronia houailouensis*, where Pierson had seen the *Chambeyronia divaricata* with a “watermelon” crownshaft, similar to that of *C. macrocapa* var. *flavopicta*. Several kilometers up the valley, we left the main track and crossed the Koua River, arriving at a patch of forest nestled at the bottom of a hill. Here, *C. houailouensis* was magnificent and a dominant species, and along with a few *C. oliviformis*, providing shade with a mix of some broad-leaved trees for several *Basselinia pancheri* and *C. divaricata*, the latter a small, solitary, slender, few-leaved palm with a new leaf that emerges and unfurls red and leaf bases with vertical, cream-yellow streaks, creating a mottled or “watermelon” crownshaft (Figs. 6–8). The “watermelon” crownshaft is another asset to this already attractive palm.

We spent several hours at the site making collections and taking notes before heading across New Caledonia to the west to check on other populations of this variety, which we named *Chambeyronia divaricata* var. *flavolineata*, meaning lined or streaked with yellow, alluding to the “watermelon”

crownshaft. This new variety seems restricted to a narrow band extending from the Koua Valley on the east to Rivière du Cap on the west. Upon our return to Nouméa the next day, we deposited all our collections from the Lavoix estate and Koua Valley at the herbarium.

We feel fortunate to have these two new species and new variety named, described, and documented prior to the International Palm Society Biennial Meeting, which will take place in New Caledonia in September 2024. During the course of the meeting, attendees will likely visit the Lavoix estate on Mt. Koghi and see *Basselinia pendulina* and *B. pseudovelutina*, as well as other New Caledonian palms on the property, and the Koua Valley and see *Chambeyronia divaricata* var. *flavolineata*, as well as *B. pancheri*, *C. houailouensis* and *C. oliviformis*, among the many places with fabulous palms that they will be fortunate to visit around New Caledonia.

LITERATURE CITED

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