Two New Species of *Chamaedorea* (Arecaceae)

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ABSTRACT. *Chamaedorea ponderosa* from Panama and *C. christinae* from Colombia are named and described as new, and compared with related taxa.

Chamaedorea includes over 100 species of small, dioecious, pleonanthic, understory palms restricted to neotropical, mostly moist or wet, primary rain and cloud forests from eastern and western Mexico to northern Bolivia. The genus is most diverse in wet mountain forests from 800 to 1500 m elevation. The mountainous area of southern Mexico and adjacent Guatemala is the primary center of distribution; a secondary center is the mountainous area shared by Costa Rica and Panama. Since the publication of a monograph of *Chamaedorea* (Hodel, 1992a) and subsequent articles adding several new species (Hodel, 1992b, 1995, 1996; Hodel et al., 1995), further study has enabled me to name and describe two new species.

Chamaedorea ponderosa Hodel, sp. nov. TYPE: Panama. Darién: Cerro Pirre, 2–3 mi. N of summit, 7°56′N, 77°42′W, 1000–1100 m, 31 Dec. 1978, *Hartman 8529* (pistillate) (holotype, MO 3233713).

Subgeneris *Chamaedoreae* (Martius) H. A. Wendland. *C. murriensi* Galeano affinis sed habitu grandiore, foliis nervis pluribus, inflorescentiis rhachidibus longioribus, petalis et sepalis nervis valde prominentibus, floribus masculinis dense positis, fructibus aurantiacis differt.

Solitary, slender, understory palmlet to 2–4 m tall. Stem 2–2.5 cm diam., ringed, internodes 4–5 cm. Leaves simple and bifid, sometimes irregularly pinnate then usually with large terminal lobes and smaller basal pinnae, drying dark olive-green with a heavy, thick, bulky appearance; leaf base 25–30 cm long, obliquely long-open apically, tubular in basal 20–25 cm, longitudinally striated with a raised costa extending from petiole for 5–8 cm; petiole 18–35 cm long, 6–8 mm diam. at apex, 8–10 mm diam. at base, rounded and lighter green abaxially, flattened but becoming channeled toward base adaxially, longitudinally striated; rachis 40–50 cm long in simple blades, 40–60 cm long in pinnate blades, rounded and lighter green abaxially, angled and lighter green adaxially; simple blades 75 × 45–50 cm, incised apically 25 cm, acute-acuminate, with 20 elevated, sharply angled, primary nerves adaxially, these elevated abaxially, spaced 2 cm apart, 2–3 secondaries between each pair of primaries, secondaries not too conspicuous adaxially, 1–2 tertiary nerves abaxially between each pair of secondaries or a secondary and a primary, nerves of lesser orders numerous, faint, all nerves lighter colored and except for primaries more conspicuous abaxially; pinnate blades 80–90 × 45–50 cm, pinnae 2–8(–16) per side, terminal pair to 30–45 × 10–15 cm, basal pinnae 30–45 × 2.5–5.5 cm, sigmoid, falcate, long-acuminate, variously nerved depending on width but in same pattern as above. Inflorescences 50–75 cm long; peduncle 40–55 cm long, 1–1.5 cm wide at base, 3–5 mm diam. at apex; bracts 5–7, prophyll 2–4 cm long, 2nd bract 10 cm long, 3rd 25 cm long, 4th 35 cm long, 5th 15 cm long and exceeding peduncle and concealing a smaller 6th bract to 5 cm long, bracts brown in flower, becoming tattered in fruit, obliquely open apically, longitudinally striated, basal bracts acute-acuminate, apical ones long-acuminate; rachis 12–17 cm long; staminate rachillae 9–31, these 25–40 cm long, 1–1.5 mm diam., drooping; pistillate rachillae 13–28, mostly simple but a few basal ones furcate, 18–25 cm long, 1.5–2 mm diam., ± spreading, peduncle and rachillae orange in fruit. Staminate flowers in ± dense spirals 2–3 mm apart, ± superficial, leaving elliptic scars 1.25–1.5 mm long, flowers in bud 2 × 2–2.75 mm; calyx 1 × 2–2.75 mm, deeply lobed ⅔ to base, prominently nerved, sepals connate in basal ⅓, broadly rounded apically, acute; petals 2 × 1.75–2 mm, ovate, valvate, acute, connate briefly basally and apically and there adnate to pistillode, corolla opening by lateral slits, prominently nerved; stamens 6, anthers 1 mm long, dorsifixed near base, filaments 0.5 mm long; pistillode 1.5 mm tall, columnar. Pistillate flowers in lax spirals 4–10 mm apart, ± superficial, leaving elliptic scars 1.75 mm long; flowers just past anthesis 2 × 3 mm; calyx 1 × 3 mm, cupular, moderately lobed, prominently nerved, sepals imbricate and/or connate in basal ½, broadly rounded apically; petals 2.5 × 3 mm, broadly obovate-spatulate, prominently nerved, imbricate in basal ¾, rounded apically; pistil 2 × 2.5

mm, globose, styles lacking, stigmas short, angled, recurved. Fruits 8 × 7 mm, subglobose, orange.

The epithet is from the Latin *ponderosus*, meaning weighty or heavy, and is used here in reference to the thick, bulky, heavy-looking inflorescences and mostly simple leaf blades. *Chamaedorea ponderosa* is closest to *C. murriensis* Galeano, but the latter differs in its smaller habit, fewer primary foliar nerves, shorter and smaller flowering and fruiting rachises, laxly placed staminate flowers, nerveless (or barely so) sepals and petals, and brown fruits. *Chamaedorea ponderosa* is to be expected in adjacent portions of Colombia; one collection, *Gentry et al. 28690*, is from "cloud forest exactly on the Panama/Colombia border."

Paratypes. PANAMA. **Darién:** Camp Summit between Morti and Sasardi, 600 m, 6–7 Mar. 1967, *Duke 10681* (sterile) (MO); Cerro Pirre, ridgetop near Rancho Plástico, 10–20 July 1977, 1200 m, *Folsom 4296* (pistillate) (MO); 1000–1400 m, 29 Dec. 1972, *Gentry 7037* (staminate) (BH, MO); Alto de Nique, 1300–1520 m, 19 Apr. 1980, *Gentry et al. 28690* (pistillate) (MO); SE of summit, 7°56′N, 77°42′W, 1400 m, 14 July 1977, *Hartman et al. 4590* (staminate) (MO); SW of summit, 7°56′N, 77°42′W, 1300 m, 15 July 1977, *Hartman et al. 4801* (staminate) (MO); N slopes, 700–950 m, 6 Apr. 1976, *Mori et al. 5452* (pistillate) (MO).

Chamaedorea christinae Hodel sp. nov. TYPE: Colombia. Valle del Cauca: Río Naya upriver from Puerto Merizalde, 10 m, 3°15′N, 77°25′W, very wet lowland forest, 23 Feb. 1983, *Gentry et al. 40692* (pistillate) (holotype, MO 3301445, 3301446, 3301447; isotype, COL).

Species insignis inflorescentiis infrafoliaribus pauciramosibus, rachillis rectis rigidis parallelis, vaginis et petiolis et rhachidibus viridibus, floribus femineis flavis ad aurantiacis, foliis pinnatis, a ceteris speciebus bene distincta.

Solitary, slender, understory palmlet to 4 m tall. Stem 2.5 cm diam., green, prominently ringed, internodes 5–6 cm. Leaves 5; sheath open nearly to base, clasping for less than ½ its length, free in apical 20 cm and there similar to petiole; petiole to 29 cm long, 7–10 mm diam., cylindrical; rachis ca. 130 cm long; 13 pinnae on each side, middle pinnae 50 × 8 cm, apical pinnae 24–26 × 3–4 cm, all lanceolate, acuminate, slightly sigmoid, contracted basally to 1.5 cm wide, subopposite, spaced 9 cm apart at point of attachment, horizontally disposed, papery, drying dark green, with 6–7 primary nerves adaxially, these green, the middle one most prominent, one secondary between each pair of primaries, tertiaries numerous, faint, primaries and secondaries yellowish abaxially. Staminate inflorescence and flowers not seen. Pistillate inflorescences infrafoliar; base and some of lower portion of peduncle not seen, remaining portion to 50 cm long, 4 mm wide at apex, longitudinally striated, green in flower, orange to red where exposed in fruit; only distal 3 bracts present but a 4th scar visible, incomplete proximal bract 12 cm long, acute, 2nd bract 17 cm long, bifid, acuminate, 3rd and most distal bract 3 cm long, mostly concealed by 2nd one, all bracts thick-papery, brownish, longitudinally striated; rachis to 3.5–5 cm long, green in flower, orange in fruit; rachillae 3–5(–6?), to 26 cm long, 2.5 mm diam., ± stiff, straight, parallel (at least in flower), diverging from rachis at obtuse angle, green in flower, orange in fruit, longitudinally striated when dry. Pistillate flowers in moderate to lax spirals 2–4 mm apart, only slightly sunken, leaving elliptic scars 3 mm long; 3.5 × 3.5 mm, ± ovoid; calyx cupular, 2.5 × 3 mm, moderately to deeply lobed with age, sepals connate and/or imbricate in basal ½ to ⅛, ± thin especially along brown margins, tips broadly rounded but incurved between petals, greenish, few white nerves adaxially; petals 3.5 × 2.5 mm, long-ovate, valvate, free nearly to base, ± cupped, acute, ± thin, yellow (to orange?) with few fine white nerves adaxially; staminodes small, toothlike, thin, whitish; pistil 2.5 mm × 2–2.5 mm, ovoid, green, stigma lobes ± deeply parted, flattened, recurved. Fruits immature, 1.5 × 1 cm, obovoid-globose, green, stigmatic remains subbasal.

Chamaedorea christinae is known only from the type, a collection of the late Alwyn H. Gentry consisting of three sheets, and one other collection. Although staminate material of *C. christinae* was not seen, the large, yellow pistillate flowers and dark green pinnae with prominent, light colored nerves suggest subgenus *Morenia* or *Moreniopsis*. The three currently recognized species of subgenus *Morenia*, *C. linearis* (Ruiz & Pavón) Martius, *C. latisecta* (H. E. Moore) A. H. Gentry, and *C. smithii* A. H. Gentry are amply distinct, however, in their pyramidal, generally much more ramified pistillate inflorescences with more than three times as many drooping, curved rachillae branching at nearly right angles from the rachis. *Chamaedorea linearis* and *C. smithii* also differ in their shorter, much more shallowly lobed pistillate calyx. Of the two species in subgenus *Moreniopsis*, *C. angustisecta* Burret differs in its distinctly mottled sheath, petiole, and rachis, more numerous narrow pinnae, and much longer pistillate inflorescence with many more curved rachillae and smaller flowers. The other member of subgenus *Moreniopsis*, *C. pauciflora*

Martius, differs in its interfoliar, spicate pistillate inflorescences with smaller flowers. Even if staminate material is collected which shows *C. christinae* to be in another subgenus, the combination of characters included in the protologue is sufficient to distinguish it from all other species in the genus.

The epithet honors my daughter, Christina H. Hodel, who has accompanied me on several field expeditions to Latin America and who has the uncanny, admirable talent of always finding the greatest of pleasures in the simplest of things.

Paratype. COLOMBIA. **Valle del Cauca:** Costa del Pacifico, Río Naya, Calle Larga, between Puerto Merizalde and San Francisco, 100 m, 3 Feb. 1990, *Bernal et al. 1755* (pistillate) (COL, TULV).

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