

s. n. (BH); cultivated material originally collected in southwest Mexico by Tom MacDougall and grown for many years by the late David Barry, Jr. in Los Angeles.

The specific epithet honors James Benzie of Orange, California, my friend and ardent collector and grower of palms for many years, who assisted in collecting the type.

Chamaedorea benziei is an unusual species with pinnae that are among the thickest in the genus. Pinnae and petioles are lightly but noticeably covered with a waxy, glaucous bloom. *C. benziei* appears closest to *C. carchensis* and *C. woodsoniana*. *C. carchensis* differs in its infrafoliar inflorescences with fewer bracts, much fewer staminate rachillae, more membranous and shallowly lobed staminate calyx, shorter anthers, fewer and longer leaves, longer petioles with conspicuous black tomentum, and more open leaf sheaths tubular only near the base and with a prominently raised costa. *C. woodsoniana* differs in its more numerous and more prominently nerved pinnae with five raised, keeled nerves abaxially and petioles with small, densely packed, irregular pits giving living material a rough texture.

Staminate flowers of *C. benziei* are similar to those of *C. seifrizii* and *C. pochutlensis* (both subgenus *Chamaedoropsis*) in that the petals spread apically only slightly, the tips remaining incurved over the stamens and are adnate or nearly so to the tip of the pistillode. In this regard, these three species approach *C. hooperiana*, *C. elatior*, and *C. graminifolia* (all in subgenus *Chamaedorea*), in that the latter three have petals which are connate apically at anthesis but then later often spread slightly. The six species tend to blur the

boundaries of these two subgenera; more work is needed to circumscribe subgeneric characters more adequately.

Chamaedorea benziei would key out next to *C. woodsoniana* in the key to the species of subgenus *Chamaedoropsis* and next to *C. linearis* in the vegetative key to the cultivated species of *Chamaedorea* in Hodel (1992). Differences with *C. woodsoniana* were noted above; *C. linearis* differs in its thinner pinnae usually with more primary nerves, thinner sheaths, and, being in subgenus *Morenia*, has multiple staminate inflorescences, staminate flowers arranged in groups, and red fruits.

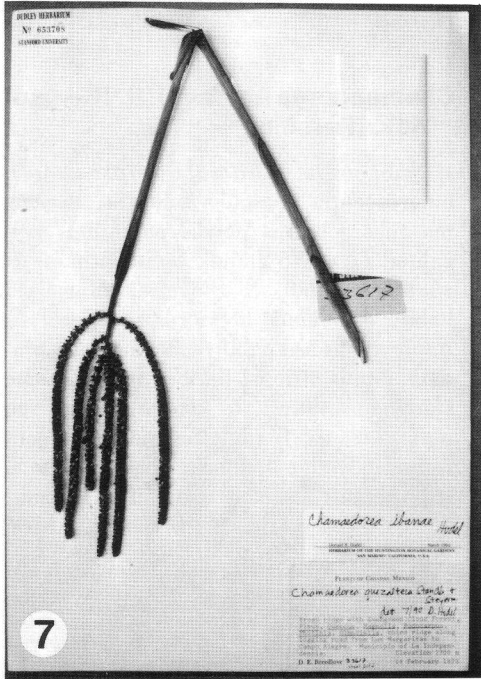
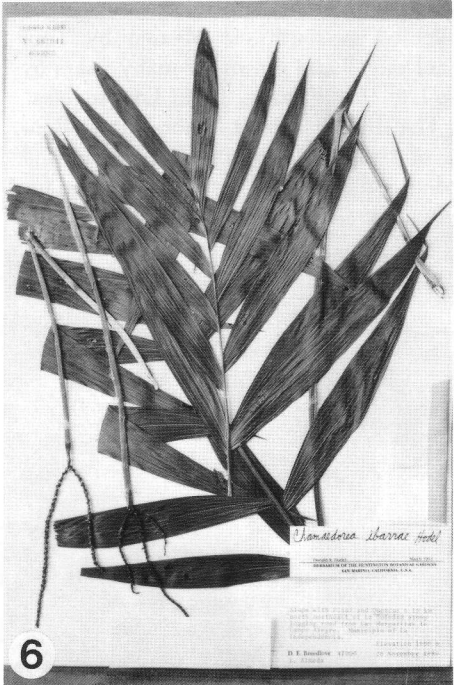
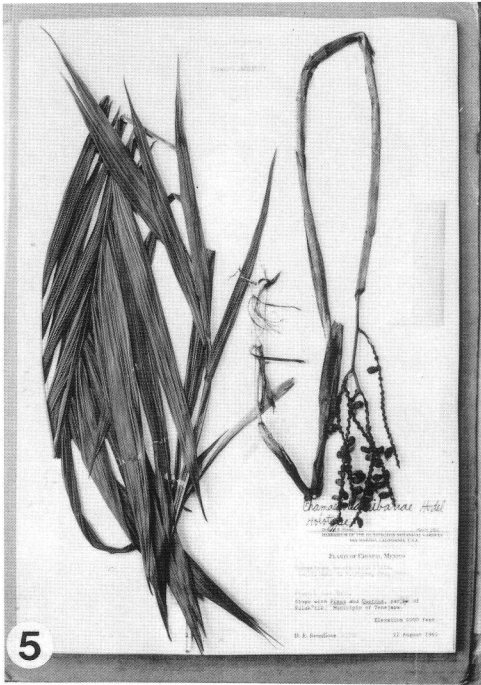
In the 1950s, the late David Barry, Jr. of Los Angeles grew the only plants known in cultivation from seeds that Tom MacDougall had collected in southwest Mexico without a specific locality. Apparently, Barry later sold his only surviving plant to Jack Ingwersen in Oceanside, California, and that specimen from which the type originated still exists in the Ingwersen Nursery.

***Chamaedorea ibarrae* D. R. Hodel sp. nov.** (Figs. 5,6).

Subgeneris *Chamaedoropsi* Oerst. inflorescentis masculis solitariis, floribus masculis solitariis petalis patentibus apicaliter. *C. nubio* Standl. & Steyerf. et *C. skutchii* Standl. & Steyerf. affinis sed habitu acaulibus brevioribus differt. *C. nubio* affinis sed habitu solitariis, foliis pinnatis pinnis strictis, floribus femineis sine staminodiis differt. *C. skutchii* affinis sed pinnis strictis, floribus femineis fere contiguus, calycibus femineis lobatis plus leviter, petalis femineis maginibus pallidis. Typus: Mexico, Chiapas, *Breedlove 11706*

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1. Plant at Ingwersen Nursery, Oceanside, California, from which holotype of *Chamaedorea benziei* was collected, *Hodel et al. 1143*.
2. Staminate inflorescence of *Chamaedorea benziei*, *Hodel et al. 1143*.
3. Pistillate inflorescence of *Chamaedorea benziei*, *Breedlove 31380*.
4. Staminate flowers of *Chamaedorea benziei*, *Hodel et al. 1143*.



[holotypus CAS (Fig. 5); isotypi BH, F, MICH].

Solitary, short, to 1–1.5 m overall height including leaves. Stem usually lacking but with age to 30 cm tall. Leaves 1–2 m long, pinnate, ascending to spreading, often appearing to arise from the ground, distichously arranged? (*Ton* 398); sheath not seen; petiole to 26 cm long or more, lightly grooved adaxially, rounded and pale abaxially, longitudinally striated laterally; rachis 50 cm long, angled adaxially, rounded abaxially; pinnae (Fig. 6) to 17 or more on each side of rachis, lower ones largest, these to 24×2.5 –3 cm, becoming progressively shorter especially in apical fifth of rachis to 18 – 22×1 –2 cm, terminal pair 15×2.3 cm, regularly or occasionally irregularly spaced, all pinnae straight, acuminate, only slightly falcate, plicate when dry and strongly cupped downward or inverted-v-shaped at point of attachment to rachis, a prominent midrib raised and yellow adaxially and abaxially, \pm keeled adaxially, rounded abaxially, a prominent primary nerve on each side of the midrib and placed toward margin, 4 secondaries between primary and midrib and 1–2 secondaries outside of primary or 2 primaries on each side of midrib with 1–2 secondaries between each primary and midrib, nerves are more prominent and yellow abaxially than adaxially.

Inflorescences erect from the base, often from the ground or leaf litter, straight, erect, few-branched. Staminate (Figs. 6, 7) peduncle at least 40 cm long (only portion seen); bracts as in pistillate; rachis lacking or to 2 cm long; rachillae 3–6, to 15 cm long, 1–1.5 mm diam., \pm stiff?, parallel, densely flowered (Fig. 7), slightly flexuous. Pistillate (Fig. 5) with peduncles to 70 cm long, straight, 5 mm wide at base and

\pm flattened, 3–4 mm diam. at apex; bracts 11–12, prophyll 2–3 cm long, 2nd bract 3 cm, 3rd 5 cm, 4th 6.5 cm, 5th 9 cm, 6th 9 cm, 7th 12 cm, 8th 16 cm, 9th 18 cm, 10th 19 cm, 11th 12 cm, sometimes a rudimentary 12th bract concealed by the 11th one, uppermost bracts not exceeding peduncle, lower ones fibrous, tattered, upper ones tubular, obliquely open, round-acute, bifid, longitudinally nerved; rachis to 4 cm long; rachillae 3–6, to 13 cm long, 1.5–2 mm diam., stiff, parallel, strongly undulate when dry, perhaps downward-pointing when heavily laden with fruits.

Staminate flowers \pm densely placed in bud, 0.5 – 1 mm apart, 1.5×1 mm, ovoid-globose or bullet-shaped, contiguous at anthesis and 3×3 – 4 mm, obovoid to oval, distinctly sunken in round-elliptic pits 1.5 – 2.5×1 mm, pits with liplike margins; calyx cupular, 0.5 – 0.75×2 – 3 mm, membranous, shallowly lobed, sepals connate in basal $\frac{1}{2}$ – $\frac{3}{4}$, rounded apically; petals 1.75 – 3×1.5 – 2 mm, ovate, valvate, free nearly to base, spreading, erect, acute, not nerved; stamens 1.75 – 2 mm long, filaments 0.5 – 1 mm long, whitish, anthers to 1 mm long, tightly appressed around pistillode, dorsifixed, pistillode equalling stamens, 2 – 2.5 mm high, columnar. Pistillate flowers in densely placed spirals, nearly contiguous especially in middle and apical part of rachilla or more loosely spaced basally, 1.25 – 2×2.5 – 4 mm, subglobose to depressed-globose (intermediate between hemispherical and shield-like), slightly to deeply sunken in elliptic depressions 3.25×1.25 – 2.25 mm usually with a raised liplike rim around each depression; calyx 0.5 – 1×2.5 – 4 mm, ca. half as high as corolla, very shallowly lobed, sepals imbricate and or connate in basal

5. Holotype of *Chamaedorea ibarrae*, Breedlove 11706. 6. Staminate inflorescence (in bud) and leaf of *Chamaedorea ibarrae*, Breedlove & Almeda 47906. 7. Densely flowered staminate inflorescence (at anthesis) of *Chamaedorea ibarrae*, Breedlove 33617. 8. Plant of *Chamaedorea keeleriorum*, Hodel & Castillo 988.

$\frac{3}{4}$, very broadly rounded to truncate (straight) apically, margins membranous; petals 1.5×2.5 –3 mm, broadly triangular, tightly imbricate nearly to apex, becoming more separated in fruit and then corolla more deeply lobed, acute to nearly straight or broadly rounded, only faintly nerved adaxially, margins membranous; pistil 1.5×2.5 mm, depressed-globose, drying and shrinking to ovoid, stigma lobes short, recurved, separated. Fruits 8–10 \times 5–7 mm, obovoid black when mature.

Distribution: MEXICO. GUATEMALA. Rocky substrate in montane rain and cloud forest or pine-oak-liquidambar forest mostly on the Atlantic slope, infrequently on the Pacific slope; 1,600–2,600 m elev.; usually on limestone on Atlantic slope.

Specimens Examined: MEXICO. Chiapas: La Independencia, logging road from Las Margaritas to Campo Alegre, *Breedlove* 33617, *Breedlove & Almeda* 47906 (CAS); Tenejapa, Kulak'tik, *Ton* 398 (CAS), *Breedlove* 11706 (holotype CAS; isotypes BH, F, MICH); Zinacantan, Chivero, *Laughlin* 1041 (BH, CAS, F); Motozintla, SW side of Cerro Mozotal, 11 km NW of jct. of road to Motozintla along road to El Porvenir and Siltepec, *Breedlove* 41649 (CAS); Escuintla, *Matuda* 30180 (MEXU). GUATEMALA. Huehuetenango: Sierra de los Cuchumatanes, Cerro Canana, *Steyermark* 49018 (F).

The specific epithet honors Mexican botanist Guillermo Ibarra-Manriquez of the National Autonomous University of Mexico (UNAM). The vernacular name is *cib*, which is also used for other species of *Chamaedorea* in the area. Unfortunately, not much is known about the habit of *Chamaedorea ibarrae* but judging from label data of *Ton* 398, the species is apparently a low, nearly stemless plant with more or less stiff, erect leaves and inflorescences arising from the ground or leaf litter. Only with age does the species form a short, visible, above-ground stem. In habit, *C. ibarrae* appears to be very close to *C.*

radicalis but the latter differs vastly in the staminate flowers in short acervuli (lines) of 3–4 flowers each, deeply lobed calyx, outwardly spreading stamens equalling or exceeding the petals, and red fruits.

The Guatemalan specimen referred here differs slightly from the Mexican material in the slightly larger flowers and the shallower floral pits.

Chamaedorea ibarrae is probably closest to *C. nubium* and *C. skutchii* from which it differs in its nearly trunkless habit. Also, *C. nubium* differs in its cespitose habit, low shieldlike pistillate flowers with staminodes, and bifid leaves (if pinnate then slightly sigmoid pinnae). *C. skutchii* differs in the fewer, sigmoid pinnae and loosely arranged pistillate flowers with more deeply lobed calyx and smaller petals drying with a dark margin. In the key to the species of subgenus *Chamaedoropsis* in Hodel (1992), *C. ibarrae* would key out next to *C. carchensis* which differs substantially in the larger habit, much larger leaves with more pinnae, black indument covering the petioles, and larger and more numerous rachillae. *C. ibarrae* also appears close to *C. volcanensis* from the Pacific slope of Guatemala in habit and inflorescence. However, the latter differs in the fewer, much broader, sigmoid pinnae with several prominent nerves drying yellowish and the very prominent, deeply lobed staminate calyx.

Chamaedorea keeleriorum D. R. Hodel & J. J. Castillo Mont **sp. nov.** (Figs. 8–10).

Subgeneris *Chamaedoropsi* Oerst. inflorescentis masculis solitariis, floribus masculis solitariis petalis patentibus apicaliter. *C. whitelockianae* Hodel & Uhl affinis sed habitu grandioribus, foliis grandioribus, pinnis numerosioribus et grandioribus, inflorescentiis infra folia, rachillis numerosioribus, rhachidibus femineis ramosis, calycibus masculis lobatis prominentibus profundis differt. Typus: Guate-