¾, 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 × 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).

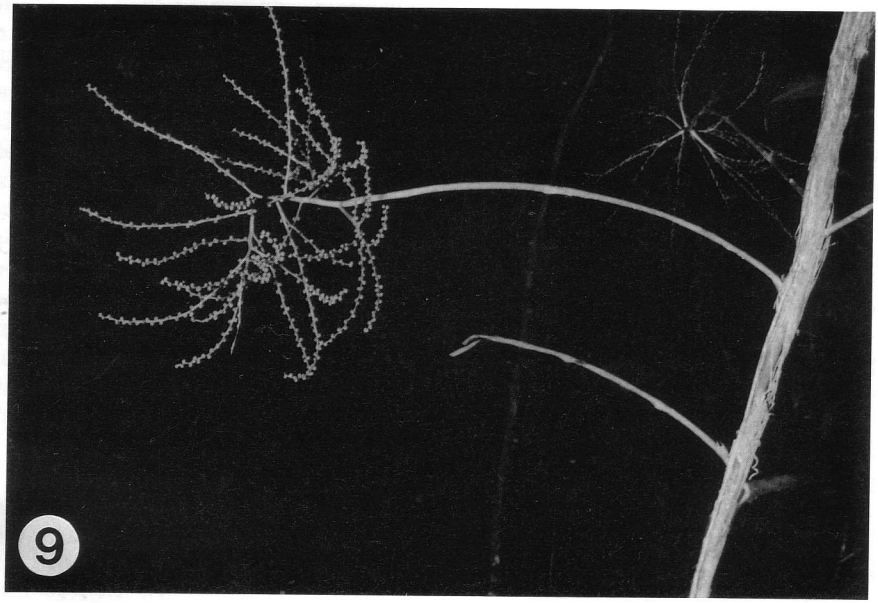
The specific epithet honors Mexican botanist Guillermo Ibarra-Manriquez of the National Autonomous University of Mexico (UNAM). The vernacular name is *cib*, which is also used for other species of *Chamaedorea* in the area. Unfortunately, not much is known about the habit of *Chamaedorea ibarrae* but 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. inflorescentiis 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-



9. Inflorescence of *Chamaedorea keeleriorum* with lower rachillae branched, *Hodel & Castillo 911* (holotype). 10. Infructescence of *Chamaedorea keeleriorum* with simple rachillae, *Hodel & Castillo 988.*

mala, Quetzaltenango, *Hodel & Castillo 911* (holotypus BH, isotypus AGUAT).

Solitary (Fig. 8), to 5 m tall, slender, erect. Stem 1.5–2.5 cm diam., smooth, green, ringed, internodes to 15 cm long, often covered with old persistent sheaths. Leaves 3–4, ascending to spreading, pinnate; sheath to 35 cm long, tightly clasp-

ing; petiole 40 cm long, rounded abaxially; rachis to 70 cm long, angled adaxially, rounded abaxially; pinnae 12–17 on each side of the rachis, middle ones largest, to 30 × 4 cm, apical ones 10 × 1.5 cm, basal ones to 20 × 1–2 cm, long lanceolate to linear, straight but lower margin falcate, long-acuminate, strongly contracted basally to 5 mm wide, widest in the middle, shining green, drying plicate, slightly prominent midrib, 3–5 much less prominent primary nerves on each side of midrib, 1–2 secondaries between each primary, tertiaries numerous, faint.

Inflorescences (Fig. 9) 3–6 per plant, infrafoliar, breaking through persistent sheaths well below the leaves, ascending to spreading. Staminate with peduncle to 30 cm long, 1 cm wide at base and flattened, 3–4 mm diam. at apex, green in flower where exposed, bracts 6–7, prophyll 2 cm long, 2nd bract 2.5 cm, 3rd 4 cm, 4th 7 cm, 5th 15 cm, 6th 17 cm, 7th 14 cm and concealing 1–2 rudimentary bracts, 7th up to 3 cm long, all acute-acuminate, bifid, brown in flower, obliquely open apically, longitudinally striated, upper one not exceeding peduncle; rachis 10 cm long; rachillae 32, lower ones longest, to 15 cm long, becoming progressively shorter toward apex of rachis and there to 8 cm long, all slender, 1 mm diam., mostly simple but lower ones sometimes furcate or with 3 branches, longitudinally ridged, spreading to slightly drooping, undulating, greenish in flower. Pistillate with peduncle to 48 cm long, 1 cm wide at base and ±flattened, 2–4 mm diam. at apex, green and ascending in flower, orange-red and arching or downward-pointing in fruit where exposed; bracts as in staminate, becoming brownish and tattered in fruit; rachis to 10 cm long, green in flower, orange-red in fruit, lower portions of later inflorescences often with 3–9 lateral axes to 2–3 cm long, each axis containing 2–5 rachillae each; rachillae 8–40, lower ones longest, to 14 cm long, becoming progressively shorter toward apex of rachis and there to 6 cm long, all 1–1.5 mm diam., longitudinally ridged when dry (nearly winged), undulating, green and spreading in flower, orange-red and downward-pointing in fruit (Fig. 10).

Staminate flowers in moderate spirals 2–4 mm apart, 3 × 4 mm at anthesis, obovoid, yellowish, slightly sunken in elliptic depressions 1.5 × 0.75 mm; calyx 1.25 × 1.5–2 mm, deeply lobed, sepals imbricate in basal ¼–⅓, acute to truncate or rounded apically, brown-margined, not or only faintly nerved when dry; petals 3 × 2.5 mm, ovate, free nearly to the base, widely spreading, acute, cupped inward especially apically, lightly nerved when dry; stamens 2 mm high, just shorter than pistillode, filaments 1–1.5 mm long, 0.25 mm diam., anthers 1 mm long, oblong, dorsifixed toward base; pistillode 2.5 mm high, columnar, just shorter than petals. Pistillate flowers in rather lax spirals 3–9 mm apart, ±superficial, leaving oval to slightly elliptic scars 1–1.5 mm long; in fruit calyx 2.5 mm across, deeply lobed, sepals 1.25 × 1 mm, imbricate (and or briefly connate?) in basal ½, acute apically, brown-margined, very faintly nerved adaxially; corolla 4–5 mm across, deeply lobed, petals 3 × 2–3 mm, broadly ovate, imbricate in basal ½–⅔, broadly rounded to acute apically with a small "beak," faintly nerved abaxially, slightly more prominently nerved adaxially; pistil not seen. Fruits 8–10 × 6–8 mm, obovoid-globose, black; seeds 8 × 5 mm, ovoid to oval.

Distribution: GUATEMALA. MEXICO. Moist or wet montane rain forest and cloud forest on the Pacific slope; 1,500–2,500 m elevation.

Specimens Examined: GUATEMALA. Quetzaltenango: southwest slope of Volcan Zunil, *Hodel & Castillo 911* (holotype BH, isotype AGUAT), *988* (AGUAT, BH), *Skutch 926* (GH). Sacatepequez: east of Antigua, *Castillo 1247* (AGUAT, BH), *Harmon 2367* (MO). Solola: SW slope of Volcan Atitlan, *Steyermark 47411* (F). Suchitepequez: south side of Volcan Ati-

tlan, *Skutch 1535* (GH). MEXICO. Chiapas: Escuintla, Mt. Ovando, *Matuda 18281* (MEXU); Angel Albino Corzo, NE slope of Cerro Venado above Finca Cuxtepec, *Breedlove & Bourell 67615* (CAS); Cintalapa, Cerro Baul, 16 km NW of Rizo de Oro, *Breedlove 24928*, *Breedlove & Smith 21381* (CAS).

The specific epithet honors Audrey and Philip Keeler of Santa Ana, California, who have encouraged and supported Hodel's work in *Chamaedorea* for several years and, in particular, supported our field work in Guatemala on numerous occasions.

The Guatemalan specimens cited here as *C. keeleriorum* along with descriptions and dimensions of their various parts were tentatively included in *C. whitelockiana* and illustrated as such in the monograph of *Chamaedorea* (Hodel 1992, p. 218 and plate 95, p. 235). The inclusion of the Guatemalan material in that treatment significantly increased the size of the habit, stem, and leaves, and size and number of pinnae and rachillae over those contained in the original description of *C. whitelockiana* (Hodel and Uhl 1990). However, in the 1992 account I alluded to the possibility that the Guatemalan material may represent a new unnamed species; new information has confirmed this possibility, enabling us to describe and name *C. keeleriorum*.

Although close to *C. keeleriorum*, *C. whitelockiana* differs in its smaller habit, stem, and leaves; smaller and fewer pinnae and rachillae; and the only shallowly lobed staminate calyx. *C. keeleriorum* would key out next to *C. whitelockiana* in the key to the species of subgenus *Chamaedoropsis* (Hodel 1992).

In the initial flowerings, the pistillate inflorescence of *C. keeleriorum* has simple rachillae originating from an unbranched rachis. However, with subsequent flowerings, the basal portion of the rachis becomes branched with several axes, each axis containing up to five rachillae. In Guatemala, *C. keeleriorum* grows with *C. fractiflexa*, *C. pachecoana*, *C. rojasiana*, and *C. volcanensis* among others. *C. keeleriorum* is not known to occur in cultivation.

Chamaedorea plumosa D. R. Hodel **sp. nov.** (Figs. 11–19).

Subgeneris *Chamaedoropsi* Oerst. inflorescentiis masculis solitariis, floribus masculis solitariis petalis patentibus apicaliter. *C. woodsonianae* L. H. Bailey et *C. carchensi* Standl. & Steyerm. affinis sed pinnis numerosioribus (ca. 100 versus 36 et 20) longilinearibus maxime graminiformibus exorientibus rhachibus planis et cursibus diversis differt. *C. glaucifoliae* H. A. Wendl. habitu affinis sed subgenere diverso sine indumentio glauco differt. Typus: Cult., *Hodel 1141* (holotypus BH; isotypi AGUAT, CAS, CR, F, HNT, K, MEXU, MO, NY).

Solitary, to 5 m or more tall (Fig. 11), erect, ±robust. Stem 4–6.5 cm diam., smooth, green, ringed, internodes 10–23 cm long. Leaves 7–9, pinnate, erect-spreading, plumose (Fig. 12), dull ±grayish green; sheath to 50 cm long, persistent, obliquely open in apical ¼, tubular and tightly clasping in basal ¾, densely longitudinally striated with a raised central costa extending from petiole; petiole 20–30 cm long, 1 cm diam., oval in x-section, deeply but narrowly channelled adaxially (Fig. 14), the channel extending beyond the first basal pinnae, green, lacking yellow band abaxially, longitudinally striated laterally; rachis to 110 cm long, green and angled adaxially, green and rounded abaxially; pinnae to 85 per side, basal ones longest, these to 54 × 0.6–1.4 cm, pinnae in apical ¼ of blade-tapering to 25 cm long, long-linear, straight, long-acuminate, aggregated in irregular groups along rachis, exiting rachis in several planes and directions (Fig. 12), mostly ascending and spreading but some downward-, foreward-, or backward-pointing to give blade plumose appearance, a hard whitish bump at point of attachment adaxially, a prominent