

Distribution (Fig. 21). Restricted to northwestern Colombia and adjacent Darién province of southeastern Panama; sea level–1200 m.

ADDITIONAL SPECIMENS EXAMINED. **Colombia.** ANTIOQUIA: Mpio. San Pedro de Urabá, 2–3 km al N de la cabecera, *Bernal G. & Galeano G. 399* (COL); Mpio. Mutatá, carretera a Pavarandogrande, 3 km adelante del puente sobre el Río Sucio, *Bernal G. & Galeano G. 467* (COL); Mpio. Mutatá, carretera a Pavarandogrande, 5–10 km adelante del puente sobre el Río Sucio, *Bernal G. 761* (COL); carretera al mar cerca de Villa Arteaga, *Hodge 7059* (BH, F); in back of building at Cauchero Villa Arteaga near Mutatá, *Moore et al. 10226* (BH, K).—BOLÍVAR: Cerro de Maco, *Cuadros V. 1886* (JGBP); Jardín Botánico Guillermo Piñeres, ca. 2 km E of Cartagena–Turbaco hwy, ca. 2 km NW of Turbaco, *Evans & Cuadros V. 208* (MICH, MO, US); ca. 800 m S of Jardín Botánico Guillermo Piñeres, Torrecilla (ca. 2 km E of Cartagena–Turbaco hwy, ca. 2 km NW of Turbaco), 10°21'N, 75°25'W, *Evans & Cuadros V. 209* (BH, CAS, MICH, MO), *Evans & Cuadros V. 210* (MICH).—CHOCÓ: trail from camp Teresita to Río Salado, *Duke 12205 (4)* (NY).—CÓRDOBA: carretera de el Viajano hacia San Marcos, Caserio "El Crucero," ca. 500 m de la Carretera, 08°37', 75°27'W, *Cogollo 5110* (JAUM, MICH); ca. 1 km W of rd Montería–Moñitos, ca. 1 km N of Casarí Morrocoy, ca. 09°00'N, 76°05'W, *Evans & Cogollo 228* (BH, JAUM, MICH, US); ca. 1 km E of rd Carrizal–San Carlos (ca. 15 airline km SE of Montería), 1–1.5 km NE of Carrizal, ca. 08°40'N, 75°45'W, *Evans & Cogollo 229* (JAUM, MICH, MO); bank of Arroyo Santa Rosa, ca. 100 m S of rd San Carlos–Santa Rosa, (ca. 30 airline km E of Montería), 2–3 km N of Santa Rosa, ca. 08°45'N, 75°40'W, *Evans & Cogollo 230* (JAUM, MICH); Montería, 100–200 m W of Río Sinú, across river opposite from Montería market area, *Evans & Cogollo 231* (JAUM, MICH).—MAGDALENA: Campo del Sol, El Banco, vicinity of Estrella, Caño Papayal, Lands of Loba, *Curran 319* (BH, US).—SUCRE: 15 km ENE de Tolú, hacienda "La Estanzuela," Sección "Bobo," *Warner N. 445* (COL), *Warner N. 619* (BH). **Panama.** DARIÉN: headwaters Río Chico, *Allen 4641* (MO); Perisenco River, *Bristan & Duke 240* (MO, US); Cerro Yaviza River near the town of Yaviza, *Bristan & Duke 420* (MO); upper Río Tuquesa, *Le Clezio 137* (MO); trail from Río Púculo base camp up SW ridge of Cerro Tacarcuna massif, *Gentry & Mori 14179* (MO); Parque Nacional del Darién, W slope of Cerro Mali, on ridge between N & S branches of Río Púculo, ca. 18 km E of Púculo, 08°04'N, 77°16'W, *Hammel et al. 16424* (MO); Parque Nacional del Darién, Estación Rancho Frío at N base of Cerro Pirre, ca. 9 km S of El Real, in forest along Quebrada Perisenco, 08°01'N, 77°44'W, *de Nevers et al. 8249* (CAS, MO); Parque Nacional del Darién, ridge between Río Topaliso and Río Púculo, and along Río Púculo, ca. 2–9 km E of Púculo, 08°03'N, 77°19'W, *de Nevers et al. 8544* (CAS); boca de Pavarandó, southern Darién, *Pitier 5688* (US).

5b. *Cryosophila kalbreyeri* subsp. *cogolloi* R. Evans, subsp. nov.—TYPE: COLOMBIA. Antioquia: 1.2 km due E of Río Claro, ca. ½ km NW of Medellín–Bogotá hwy, 4.3 km NE of bridge over Río Claro, 05°56'N, 74°50'W, 380 m, 29 Feb 1992, *Evans & Cogollo 247* (holotype: JAUM!; isotypes: BH! COL! MICH! MO!).

Common name: *barbasco*.

Acanthorrhizae longissimae plerumque 10–30 cm longae, rhachilla longissima quam ramo principali longissimo inflorescentiae 1.3–3.2 (–6.1)-plo longior, flores 2.8–3.7 mm lati, tubus staminum 1.4–1.9 mm latus, antherae 1.5–2.0 mm longae, 0.6–0.9 mm latae; florescentia Oct.–Apr.

Solitary palm. Trunk 1.0–3.5 (–4.8) m long. Longest root-spines (3–) 10–ca. 30 cm long. Leaves 14–23; petiole 0.86–2.19 m long, 0.67–1.46 cm wide; central segments 52.0–97.5 cm long; marginal segments 43.0–70.0 cm long; central abaxial split to within 0.5–3.5 cm of base, dividing blade into two more or less equal halves of (18–) 22–28 segments each; widest segment 2.4–3.6 (–4.2) cm wide at its widest. Inflorescence primary axis 41.5–58.5 cm long; peduncle 29.0–37.0 (–41.0) cm long;

rachis 10.0–16.0 (–24.5) cm long; first-order branches to 5.5 cm long near base of rachis; rachillae to 6.2 (–7.1) cm long near base of rachis. Flowers 3.2–4.5 mm long, 2.8–3.7 mm in diameter; sepals 2.9–4.0 mm long; petals 2.6–3.5 mm long; stamen tube 1.4–1.9 mm in diameter; anthers 1.5–2.0 mm long, 0.6–0.9 mm wide; ovary 0.4–0.8 mm in diameter. Fruit 1.3–1.6 (–1.9) cm long, 1.2–1.7 cm in diameter, usually more or less spheroidal.

Distribution (Fig. 21). Known only from the valleys of the Río Porce in central Antioquia and the Río Claro–Corconá Sur in extreme southeastern Antioquia, Colombia; 300–1200 m.

ADDITIONAL SPECIMENS EXAMINED. **Colombia.** ANTIOQUIA: carretera Medellín–Amalfi, ca. 5 km adelante de las partidas para Anorí, *Bernal G. et al.* 933 (COL, K), *Bernal G. et al.* 934 (COL); Mpio. San Luis, Cañón del Río Claro, 05°53'N, 74°39'W, *Cogollo & Borja* 1602 (JAUM), *Cogollo & Borja* 1623 (JAUM); Mpio. San Luis, “Vereda Confusas,” 06°03'N, 74°47'W, *Cogollo & Cárdenas* L. 4512 (JAUM, MO); Mpio. Amalfi, margen derecha del Río Porce, ca. 500 m abajo del puente de Acacias, 06°50'N, 75°08'W, *Cogollo et al.* 5092 (JAUM, MICH), *Cogollo et al.* 5094 (JAUM, MICH); Mpio. Amalfi, carretera de Medellín–Amalfi, ca. 2 km después de la desviación hacia Anorí, 06°09'N, 75°50'W, *Cogollo et al.* 5095 (JAUM, MICH), *Cogollo et al.* 5096 (JAUM, MICH); Mpio. Puerto Triunfo, Autopista Medellín–Bogotá, sector Río Claro–Puente sobre el Río Magdalena, camino de la autopista hacia la gruta de El Cóndor, ca. 400 m de la autopista, 05°56'N, 74°50'W, *Cogollo et al.* 5113 (JAUM, MICH), *Cogollo et al.* 5114 (JAUM, MICH), *Cogollo et al.* 5115 (JAUM, MICH); along Medellín–Amalfi via Barbosa rd, 3.4 km N of intersection with rd to Anorí (ca. 25 km SW of Amalfi, ca. 80 km NE of Barbosa), 06°50'N, 75°09.5'W, *Evans & Cogollo* 211 (BH, CAS, JAUM, MICH, MO), *Evans & Cogollo* 212 (JAUM, MICH); rd from Medellín to Amalfi, 5 km beyond turning to Anorí, *Henderson & Bernal* G. 151 (NY); Mpio. Amalfi, Río Porce, margen derecha del Río, Proyecto Porce III, Puente Acacias río abajo (hacia el N), *Ramírez & Echavarría* 3586 (JAUM); San Luis, *Rentería & Cogollo* 2622 (JAUM).

This subspecies is named for Alvaro A. Cogollo, who has collected the majority of the existing specimens of it.

6. *Cryosophila macrocarpa* R. Evans, *Novon* 2: 58. 1992.—TYPE: COLOMBIA.

Chocó: ca. 300 m S of Bahía Solano–El Valle rd, ca. 2 km from El Valle (ca. 500 m E of bridge over Quebrada Tundó), 06°07.5'N, 77°25'W, ca. 20 m, 6 May 1991, *Evans & Ramírez* 213 (holotype: COL!; isotypes: JAUM! MICH! MO!).

Common name: *nolf*.

Solitary palm. Trunk ca. 5 m long, erect or arching upward, ca. 12 cm DBH, armed with root-spines, usually densest proximally and thinning distally; nodes not discernible. Root-spines 0–100+ per 10 cm of trunk, most to ca. 20 (avg. ca. 6–8) cm long, occasional outliers to ca. 55 cm long, almost always 1 (–2)-times-branched, rarely unbranched, usually descending; basal adventitious roots growing into the soil, similar morphologically to root-spines above, only often longer (including their branches). Leaves ca. 30, ca. 6 distal to leaf through which youngest inflorescence emerges, additionally 7–16 marcescent; petiole 2.80–3.05 m long, 2.38–2.57 cm wide; hastula 1.4–1.7 cm long, 2.5–3.5 cm wide, 1.5–2.2 times as wide as long, depressed-triangular, blunt to subpointed, briefly bifid apically; blade 0.200–0.225 mm thick, adaxial surface shiny, abaxial surface chalk-white to whitish pubescent;