In the Guayana Highland region of Venezuela, and adjacent parts of Brazil and Colombia, the majority of specimens are spiny. These are found on white-sand soils and podzols in poorly-drained places, usually in black-water areas, in forest, *campina*, or savanna at both low and high (to 1700 m) elevations. Individual specimens have been referred to as *B. acanthocnemis* and *B. tenuis*. This form also occurs sporadically on white-sand formations near Manaus, and south of the Amazon river near Humaitá, Borba, and the upper Rio Tapajos. Leaves of these spiny plants are mostly pin­oblanceolate, deeply bifid leaves, with linear, strongly

In the central Amazon region of Brazil most plants have simple leaves, with lobes typically 17–26 cm long and 1.5–3 cm wide. Pinnate-leafed plants occur near Tefé, and occasionally in other places.

In the western Amazon region of western Brazil, Colombia, Peru, and Bolivia there is considerable variation. Typical forms occur, but there are also some unusual ones. Some plants from Peru (Loreto) and Brazil (western Amazonas) have small, simple leaves on fully exposed parts of sand dunes. The species is named for Raimundo Soeiro, who, with

**Distribution and habitat.** Brazil (Bahia) (Fig. 65A); restinga vegetation, on sandy soils, near sea level.

**Additional specimens examined.** BRAZIL. BAHIA: Mun. Salvador, ca. 35 km NE of Salvador, 2 Sep 1978, Morawetz 12-2978 (BH); Mun. Camaçari, 0.5 km N of Timbras, 12°18'S, 38°20'W, 29 Sep 1988, Noblick & Soeiro 4609 (F).

**Local names.** Brazil: jussa, tucum.

*Bactris soeiroana* is diagnosed by its sheath, petiole, and rachis densely covered with white, woolly tomentum. It grows in an unusual habitat for *Bactris*, on fully exposed parts of sand dunes. The species is named for Raimundo Soeiro, who, with Larry Noblick, collected the type and many other Bahian palms.

### 66. Bactris soeiroana Noblick, sp. nov.

Type. Brazil. Bahia: Mun. Salvador, ca. 35 km NE of Salvador, 2 Sep 1978, Morawetz 12-2978 (BH); Mun. Camaçari, 0.5 km N of Timbras, 12°18'S, 38°20'W, 29 Sep 1988, Noblick & Soeiro 4609 (F).

**Distribution and habitat.** Brazil (Bahia) (Fig. 65A); restinga vegetation, on sandy soils, near sea level.

**Additional specimens examined.** BRAZIL. BAHIA: Mun. Salvador, ca. 35 km NE of Salvador, 2 Sep 1978, Morawetz 12-2978 (BH); Mun. Camaçari, 0.5 km N of Timbras, 12°18'S, 38°20'W, 29 Sep 1988, Noblick & Soeiro 4609 (F).

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*Inflorescences* interfoliar; peduncle 5–15 cm long, straight, not spiny; prophyll 7–9 cm long; peduncular bract 16–26 cm long, reddish brown to grayish white tomentose, lacking spines; rachis 4.5–9 cm long; rachillae 4–6, 2.5–6.5 cm long, at anthesis densely covered with moniliform trichomes; *triads* irregularly arranged among paired or solitary staminate flowers; staminate flowers to 4.5 mm long; sepal lobes 1–1.5 mm long; petals 2.5–4.5 mm long; stamens 6–7; pistillode absent; pistillate flowers to 3 mm long; calyx annular, 1–2 mm long; corolla tubular, 2–3 mm long; staminodes absent; *fruits* to 1 x 1.5 cm, depressed obovoid, yellow at maturity; mesocarp not seen; endocarp not seen; fruiting perianth not seen.

**Distribution and habitat.** Brazil (Bahia) (Fig. 65A); restinga vegetation, on sandy soils, near sea level.

**Additional specimens examined.** BRAZIL. BAHIA: Mun. Salvador, ca. 35 km NE of Salvador, 2 Sep 1978, Morawetz 12-2978 (BH); Mun. Camaçari, 0.5 km N of Timbras, 12°18'S, 38°20'W, 29 Sep 1988, Noblick & Soeiro 4609 (F).

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**Distribution and habitat.** Brazil (Bahia) (Fig. 65A); restinga vegetation, on sandy soils, near sea level.

**Additional specimens examined.** BRAZIL. BAHIA: Mun. Salvador, ca. 35 km NE of Salvador, 2 Sep 1978, Morawetz 12-2978 (BH); Mun. Camaçari, 0.5 km N of Timbras, 12°18'S, 38°20'W, 29 Sep 1988, Noblick & Soeiro 4609 (F).

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**Distribution and habitat.** Brazil (Bahia) (Fig. 65A); restinga vegetation, on sandy soils, near sea level.

**Additional specimens examined.** BRAZIL. BAHIA: Mun. Salvador, ca. 35 km NE of Salvador, 2 Sep 1978, Morawetz 12-2978 (BH); Mun. Camaçari, 0.5 km N of Timbras, 12°18'S, 38°20'W, 29 Sep 1988, Noblick & Soeiro 4609 (F).

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**Fig. 64.** (1) *Bactris soeiroana* (from Noblick & Soeiro 4682). 1a. Staminate flower. 1b. Sepals. 1c. Section of staminate flower. 1d. Pistillate flower. 1e. Corolla. (2) *B. sphaerocarpa* (2a–2c from Pardini 62, 2d–2e from Henderson et al. 1678, 2f–2h from Pipoly et al. 13758). 2a. Staminate flower. 2b. Sepals. 2c. Section of staminate flower. 2d. Pistillate flower. 2e. Corolla. 2f. Fruit. 2g. Endocarp, top view. 2h. Endocarp, side view. (3) *B. syagroides* (from Vicentini 1170). 3a. Staminate flower. 3b. Sepals. 3c. Section of staminate flower. 3d. Pistillate flower. 3e. Corolla.


*Bactris sphaerocarpa* var. *schizophylla* Drude in Martius, Fl. bras. 3(2): 326. 1881. Type. Brazil. Amazonas:
Barreiras de Cupana, Rio Purus, 4 Oct 1874, J. Trail 901/CXXXIX (holotype, K; isotype, BM).

Stems cespitose, 0.5–1.5 m tall, 0.8–1.5 cm diam. Leaves 9–13; leaf spines scattered, black, terete, to 3 cm long, few on sheath, petiole, and rachis, or sometimes absent; sheath 11–18 cm long; ocrea to 10 cm long; petiole 10–28 cm long; rachis 18–55 cm long; blade simple, deeply bifid apically and narrowly cutinate basally, or pinnate with pinnae 2–3 per side, sigmoid, with long, filamentous, minutely spinulose apex, the apical one wider than and well separated from the others; blade to 50(–80) cm long and 15 (–20) cm wide at apex of rachis, pinnate leaves with middle pinnae 18–27 × 3–4 cm. Inflorescences interfoliar; peduncle ca. 6 cm long, recurved to straight, not spiny; prophyll 8–9 cm long; peduncular bract 10–17 cm long, not spiny or usually spiny with short, flattened, brown or black spines to 0.3 cm long; rachilla 1, 3–5 cm long, at anthesis densely covered with brown trichomes; triads regularly arranged almost throughout rachilla; staminate flowers 5–6 mm long; sepals 1–2 mm long; petals 5–6 mm long; stamens 6; pistillode absent; pistillate flowers 3.5–4.5 mm long; calyx tubular, 3–4 mm long; corolla tubular, 3–4 mm long; staminodes minute or absent; fruits to 2.5 × 1.7 cm, broadly obovoid, prominently rostrate, purple-black; mesocarp juicy; endocarp turbinate, the sterile pores slightly displaced longitudinally; endocarp fibers numerous, with juice sacs attached; fruiting perianth with lobed calyx half as long as the lobed corolla, without staminodial ring.

**Distribution and habitat.** Western Amazon region of Colombia (Amazonas), Peru (Loreto, Madre de Dios), and Brazil (Acre, Amazonas) (Fig. 65B); lowland rain forest on *terra firme*, at 150–400 m elevation.

**Additional specimens examined.** COLOMBIA. AMAZONAS: Río Caquetá, La Pedrera, Chorro Córdoba, 13 Mar 1990, Galeano et al. 2073 (COL, FTG, NY). PERU. LORETO: Prov. Maynas, Río Nanay, Caserío Mishana, 30 km SW of Iquitos, 16 Aug 1980, R. Foster 4342 (AMAZ); Prov. Maynas, Mishana, Río Nanay, 3°52'S, 73°30'W, 140 m, 12–13 Jan 1983, Gentry et al. 39403 (MO); Prov. Maynas, Quebrada Sucursari, Río Napo, 3°15'S, 72°55'W, 150 m, 5 Jul 1983, Gentry et al. 42591 (MO), 21 Feb 1989, Vásquez & Jaramillo 11826 (MO); Maynas, near Iquitos, Puerto Almendras, 10 Sep 1995, Henderson &


Bactris sphaerocarpa is diagnosed by its inflorescence with 1 racilla with regularly arranged triads almost throughout, purple-black fruits, and numerous endocarp fibers with juice sacs attached. Henderson recognized two varieties (var. tomentosa and var. sphaerocarpa) of a broadly conceived B. tomentosa. These are recognized here at the species level. Synonymy was established by Henderson (1995), although he (and Henderson et al., 1995) included B. angustifolia (here included under B. bifida) as a synonym of B. tomentosa var. sphaerocarpa. Some specimens examined here much resemble smaller versions of B. fissifrons, and the two species may be related.

Distribution and habitat. Eastern Amazon region of Brazil (Amazonas, Pará) (Fig. 66A); lowland rain forest on terra firme.

Additional specimens examined. BRAZIL. AMAZONAS: Mun. Borba, Rio Abacaxis, 4°10'S, 58°41'W, 8 Jul 1983, Cid 4100 (INPA); Abacaxis, 11 May 1874, J. Trail 891/XLVI (K); Reserve Florestal Ducke, Manaus–Itacoatiara rd., km 26, Sábia, 2°53'S, 59°58'W, 7 Feb 1996, Vicentini 1170 (INPA).

Bactris syagroides is diagnosed by its 30–38, narrowly linear (25–35 × 0.7–1 cm) pinnae per side, more or less regularly arranged and spreading in the same plane. This species is still poorly known and there are few collections. The neotype closely matches the type of B. multiramosa, and the latter is thus placed in synonymy. Burret was somewhat puzzled by Kuhlmann’s collection (type of B. multiramosa), because although it appeared to be related to the Amylocarpus group, it had many more racillae than usual.