

# Mitracarpus longicalyx (Rubiaceae, Spermacoceae), a new species from northeastern Brazil

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Souza, E. B. (Curso de Biologia, Universidade Estadual Vale do Acaraú, Sobral, Ceará, 62040-370, Brazil; email: ebsouza@sob.yazigi.com.br) & M. F. Sales (Departamento de Biologia, Universidade Federal Rural de Pernambuco, Recife, Pernambuco, 52171-930, Brazil; email: mfsales@zaz.com.br). *Mitracarpus longicalyx* (Rubiaceae, Spermacoceae), a new species from northeastern Brazil. *Brittonia* 53: 482–486. 2001.—***Mitracarpus longicalyx*** is here described and illustrated from sandy areas of the caatingas of northeastern Brazil. The new species is similar to *M. hirtus* and *M. megapotamicus*.

**Key words:** *Mitracarpus*, Spermacoceae, Rubiaceae, caatinga, Brazil.

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While analyzing herbarium material for a revision of *Staelia* Cham. & Schtdl. and *Mitracarpus* Zucc. for the state of Pernambuco, Brazil, an undescribed species of *Mitracarpus* was encountered. Due to the paucity of specimens and the need to observe the species in its natural habitat, the publication of this taxon was delayed until additional material was found.

MITRACARPUS Zucc. ex Schult. & Schult. f.,  
Syst. Veg., Mant. 3: 210, 399. 1827.

*Annual or perennial herbs*, or sometimes shrubs. Young stems 4-angled, branched or unbranched. *Leaves* opposite and decussate, subsessile to short-petiolate, leaf blades usually narrow, chartaceous. *Stipules* adnate to the petiole base to form a sheath with several setae on the edge. *Inflorescences* terminal or axillary and terminal, glomerulate, with densely crowded flowers, the glomerules subtended by bracts. *Flowers* sessile or subsessile, bisexual and monomorphic, hypanthium turbinate to subglobose. *Calyx* persistent, 4-lobed; lobes opposite, two longer and two shorter. *Corolla* hypocrateriform, white, tube usually with a ring of moniliform hairs within; lobes 4, valvate in bud. *Stamens* 4, inserted on the throat, anthers oblong to linear, dorsifixed,

included or exserted. Style filiform, bifid. *Ovary* 2-locular, seldom 3-locular, each locule with 1 ovule fixed to the septum. *Fruit* capsular with transversal dehiscence, releasing the apical portion with the persisting calyx (operculum, which has the shape of a mitre) and exposing the seeds; the basal portion of the fruit remaining attached to the pedicel, formed by the basal portion of the carpels and the medial septum. *Seeds* plano-convex, smooth to reticulate-foveolate with square-shaped or X-shaped depression on the ventral face; depressions covered by strophiole.

The genus *Mitracarpus* comprises about 40 species present in tropical and subtropical regions of the New World: from Mexico, Central America, and the Caribbean Islands to Argentina (Andersson, 1992). One species of this genus, *Mitracarpus hirtus* (L.) DC., is pantropical, occurring also in the continents of Asia and Africa and in the Pacific Islands (Verdcourt, 1975; Nicolson, 1977; Fosberg et al., 1993).

***Mitracarpus longicalyx*** E. B. Souza & M. F. Sales, sp. nov. (Figs. 1, 2)

TYPE: BRAZIL. Ceará: Mun. Aiuaba, Distrito Lagoa da Boiada, Sítio Vale do Boi, 6°34'S, 40°17'W, ca. 500 m, 5 Apr

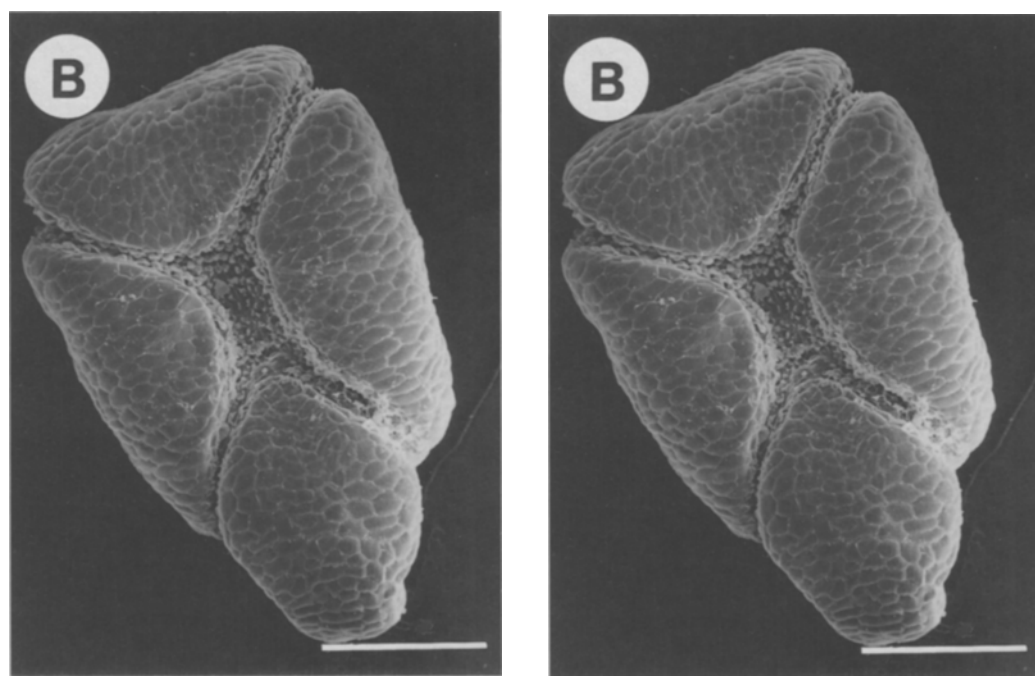


FIG. 1. *Mitracarpus longicalyx* seeds (from Pinto 134, HBR, MG). **A.** Dorsal view, showing the semicircular depressions of the exotesta. **B.** Ventral view, showing the X-shaped depression. (Scale = 250  $\mu$ m.)

2000 (fl), Souza, Delprete & Cavalcanti 508 (HOLOTYPE: EAC; ISOTYPES: CTES, IPA, K, MO, NY, PEUFR, UB, US).

Herbae, *M. hirta* (L.) DC. similes, sed stipulis (6–)7–9 (nec 9–12) -setosis, tubo calycino (0.8–)1–1.5 (nec  $\pm$  0.5) mm longo, corolla extus glabra vel pilosa (nec puberulo-papillosa), atque seminibus dorso depressis (nec planis) diversa.

*Short-lived herbs*, erect, few- to several-branched, 5–50 cm tall; stems pubescent-puberulent to glabrate, pale green, often vinaceous at the internodes; internodes 4.2–11.2 cm long. *Stipular sheath*, 2.5–3 mm long, pubescent, with (6–)7–9 linear setae 2–4 mm long, sparsely pilose at base. *Leaves* elliptic, attenuate at base, acute and mucronate at apex, (0.8–)1.1–4.5  $\times$  (0.2–)0.9–1.3 cm, pale green, slightly scabrous on both sides; secondary veins 3–4 on each side, impressed above, prominent below. *Flowering branches* with 1–2 (rarely 3–5) glomerules terminal and axillary, pubescent and puberulous; internodes (1.5–)4.5–8.5(–11.5) cm long; glomerules (0.5–)1.3–1.9 cm diam., the terminal ones subtended

by 4 bracts (rarely 6, when formed by two nodes, with an extremely reduced internode), the axillary ones subtended by 2 bracts; bracts elliptic to ovate-elliptic, (0.7–)2.2–5  $\times$  (0.4–)0.7–1.6 cm, pale green, often purple at the base (forming a purple ring around the glomerules); bracteoles setose, ca. 3 mm long. *Flowers* subsessile, slightly fragrant. *Calyx* lobes linear-lanceolate, pilose, the longer two (2–)2.5–3 mm long, the shorter two 1–1.5 mm long, usually with purple margins; tube (0.8–)1–1.5 mm long (frequently longer when fruits mature). *Corolla* 4–5 mm long, outside glabrous or minutely pilose on the upper third of the tube; lobes ovate-triangular, 1–1.5 mm long, pilose externally. *Stamens* sessile; anthers oblong, ca. 1 mm long, yellow. *Style* 4–5 mm long; stigmatic lobes 0.7 mm long. *Capsules* obovoid, 1.5–2  $\times$  1 mm, glabrous or rarely sparsely pilose at apex. *Seeds* obovoid, 0.8–1  $\times$  0.5 mm, brown, with an X-shaped depression on the ventral face, and semicircular depressions on the dorsal face (the dorsal depressions being a

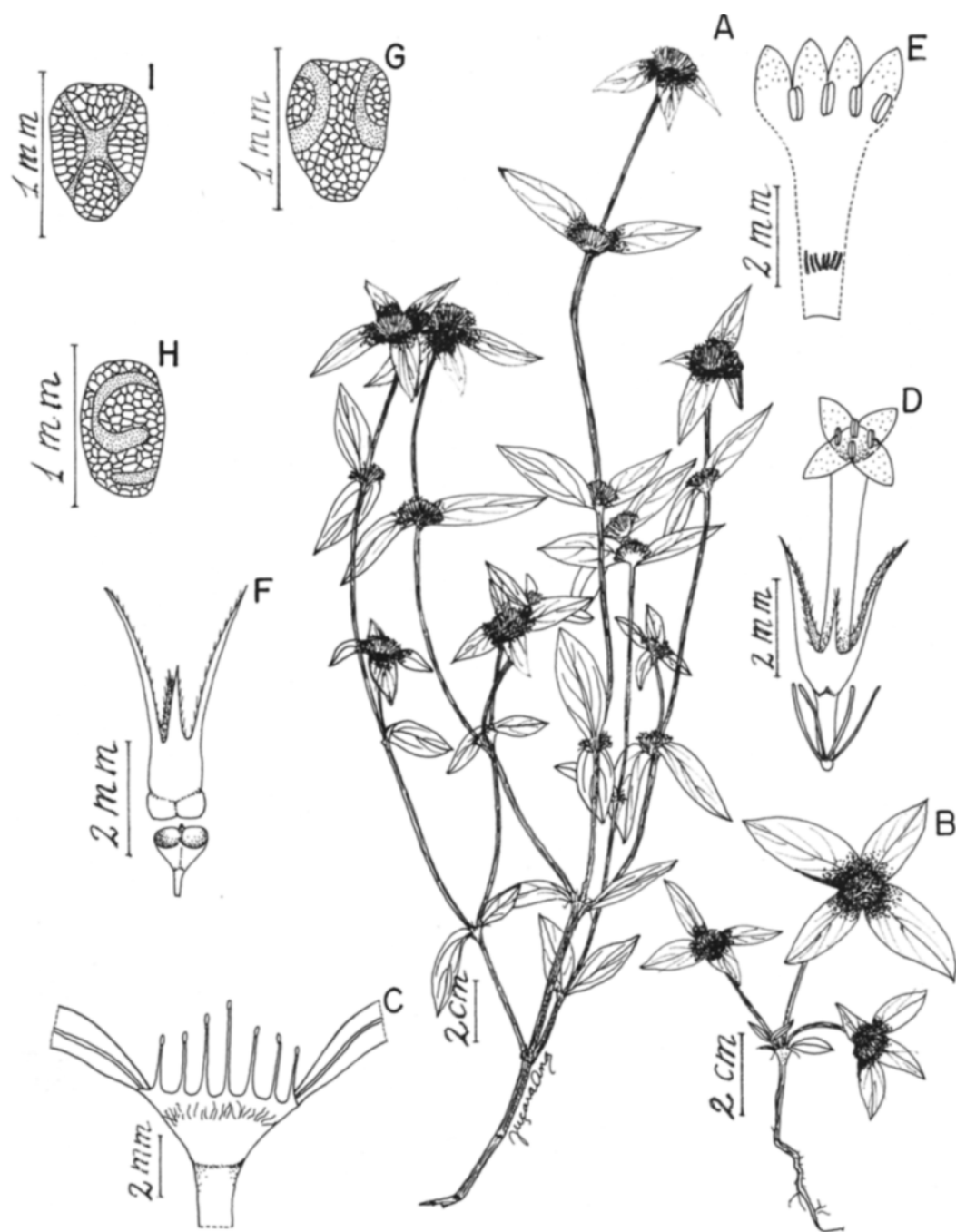


FIG. 2. *Mitracarpus longicalyx* (from *Heringer* 838, PEUFR, UB). A, B. Habit. C. Stipule (with 7 setae). D. Flower in anthesis. E. Opened corolla. F. Capsule after dehiscence. G–I. Seeds. G. Dorsal view. H. Lateral view. I. Ventral view.

continuation of the ventral ones, Fig. 2A, B).

Specimens examined: BRAZIL. **Bahia:** Mun. Feira de Santana, 26 Jun 1982 (fl, fr), *Lobo s.n.* (ALCB 16274); Mun. Jaçu, Distr. Lajedo Alto, Faz. Lapa, Apr 1974 (fl, fr), *Costa s.n.* (ALCB); Mun. Jussara, Toca, 2 Apr 1984 (fl, fr), *Bautista & Salgado 919* (MG); Mun. São Gonçalo, Faz. Água Branca, 15 Nov 1975 (fl, fr), *Costa s.n.* (ALCB 21550); BR-242, Km 30, 11 May 1975 (fl, fr) *Gusmão s.n.* (ALCB 23001). **Ceará:** Mun. Aiuaba, Distr. Pé Queimado, Serra do Tanque, 18 Apr 1980 (fl), *Martins & Figueiredo s.n.* (EAC 8350, UB); Mun. Aiuaba, Distr. Lagoa da Boiada, 26 Apr 1996 (fl, fr), *Lima-Verde et al. 33* (EAC); Mun. Aiuaba, Distr. Lagoa da Boiada, Sítio Vale do Boi, 5 Apr 2000 (fl), *Delprete et al. 7324* (EAC, IPA, K, MO, NY, UB, US, UVA); Mun. Aiuaba, Distr. Barra, cruzamento entre a rod. Confiança e a rod. Aiuaba-Barra, 6 Apr 2000, *Souza et al. 514* (EAC, IPA, K, MO, NY, UB, US, UVA), *Delprete et al. 7328* (EAC, IPA, K, MO, NY, UB, US, UVA); Mun. Aiuaba, Distr. Barra, rod. Barra-Aiuaba, 6 Apr 1984 (fl, fr) *Collares & Dutra 189* (MG); Mun. Parambu, Faz. Pau Preto, 22 May 1982 (fl, fr), *Nunes s.n.* (EAC 11463). **Pernambuco:** Mun. Afrânio, margem da rod. em direção ao Piauí, s.d. (fl, fr), *Heringer et al. 298* (PEUFR, UB); Mun. Parnamirim, Km 5 da rod. Parnamirim-Petrolina, 27 Apr 1984 (fl), *Araújo 27* (PEUFR, IPA); Mun. Petrolina, área do CPATSA, 25 Jul 1984 (fl, fr), *Pinto 134* (HBR, MG); Mun. Santa Maria da Boa Vista, 24.7 Km NNE de Lagoa Grande, 7 Mar 1970 (fl), *Eiten 10864* (SP); Mun. Serra Talhada, Serra da Carnaubinha, 22 May 1971 (fl, fr), *Heringer et al. 838* (PEUFR, UB); Mun. Tacaratu, s.d. (fl, fr), *Bastos-Accioly et al. 192* (PEUFR); entre Serra Talhada e Petrolina, 17 Apr 1971 (fl), *Heringer et al. 35* (PEUFR, UB). **Piauí:** Mun. Itaueira, 21 Mar 1984 (fl, fr), *Orlandi 590* (MG).

**Distribution and phenology.**—*Mitracarpus longicalyx* is found in the states of Piauí, Ceará, Pernambuco, and Bahia, Brazil; flowering and fruiting occurs from March to June, during the rainy season.

**Ecological observations.**—*Mitracarpus longicalyx* is a short-lived plant of the white-sand areas of the caatinga (xerophytic thorn woodlands), forming small populations, in the seasonal herbaceous layer. These white-sand soils, solodic planossols (Jacomine et al., 1973), are characterized by low fertility, high acidity, sodium saturation, and sandy texture, which makes them highly susceptible to erosion. The habitat has low, seasonal precipitation and is subject to strong anthropogenic pressure, particularly caused by goat and cattle raising and frequent fires.

*Mitracarpus longicalyx* is easily distinguished by its bracts frequently purple-col-

ored at the base, calyx tube being much longer than other species of the genus (0.8–1.5 mm long; see Fig. 1F), and seeds with dorsal semicircular depressions (Fig. 2A). *Mitracarpus longicalyx* is similar and probably most closely related to *M. hirtus* (L.) DC. and *M. megapotamicus* (Spreng.) Standl.; a key separating these three species is given below.

1. Calyx tube in mature fruits (0.8–)1–1.5 mm long; bracts usually purple at the base, forming a purple ring around the glomerules; seeds with semicircular depressions on the dorsal face ..... *Mitracarpus longicalyx*
1. Calyx tube in mature fruits ca. 0.5 mm long; bracts without purple pigmentation at the base; seeds without depressions on the dorsal face.
  2. Glomerules axillary and terminal; corolla as long as or shorter than calyx; seeds reticulate-foveolate, with X-shaped depression on the ventral face ..... *M. hirtus*
  2. Glomerules mostly terminal, seldom axillary; corolla longer than calyx; seeds smooth, with square-shaped depression on the ventral face ..... *M. megapotamicus*

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