

Guatteria rupestris (Annonaceae), a New Species from Minas Gerais, Brazil

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ABSTRACT. *Guatteria rupestris* Mello-Silva & Pirani, a new species of Annonaceae, is described. It is distinct because of a combination of several characters, mainly the shrubby, sclerophyllous habit with small, coriaceous, and prominently veined leaves. The new species occurs in open rocky areas in some "serras" of the Espinhaço range, Minas Gerais, Brazil. Besides the description and illustration, comments on its probable taxonomic relationships, habitat, and distribution are presented. A key that distinguishes *G. rupestris* from the other sympatric species of *Guatteria* is also provided.

The genus *Guatteria*, with approximately 250 described species, is the largest of the Annonaceae. Many of the 170-odd species described by Fries were published in 1939. Since his works, relatively few species have been described (Barringer, 1984; Bisse, 1975; Johnson & Murray, 1990; Maas et al., 1988; Mello-Silva & Pirani, 1988). While performing floristic surveys of the Annonaceae of the Espinhaço range, in the states of Minas Gerais and Bahia, Brazil, two new species were found: *G. notabilis* Mello-Silva & Pirani (1988) and *G. rupestris*, here presented.

***Guatteria rupestris* Mello-Silva & Pirani, sp. nov.**

TYPE: Brazil. Minas Gerais: Itacambira, ca. de 2 km da cidade na estrada para Juramento, afloramento rochoso no campo rupestre, 17°S, 43°50'W, 14 Dec. 1989, J. R. Pirani, P. T. Sano, A. Freire-Fierro & T. R. S. Silva CFCR 12752 (holotype, SPF—3 sheets; isotypes, K, MBM, MO, NY, RB, U). Figure 1.

Frutex vel arbor parva, circa 1.5–4 m alt. Rami adscendentes aut patentes, ramuli ochracei-hirtelli vel tomentosi vel glabri. Folia breviter petiolata, lamina coriacea, venosa, elliptica vel oblongo-elliptica vel obovato-elliptica, 3.5–8(–12) cm longa, (1.5–)2–3(–4) cm lata, ad apicem rotundata vel retusa vel breviter acuminata, ad marginem revoluta, glabra vel subtus ad nervum medium dense hirtella; venatio brochidodroma. Inflorescentiae axillares, uniflorae. Sepala libera, deltata, circa 4 mm longa, 3 mm lata; petala aequalia, oblonga vel oblongo-spathulata, ad apicem rotundata vel obtusa, 8–15 mm longa, 5–10 mm lata; stamina numerosa, circa 1.8 mm

longa, disco connectivi plano haud umbonato, aurantiaco; carpellis circa 2 mm longis. Monocarpia 10–17, teretes-ellipsoidea, 7–10 mm longa, 3.5–5 mm crassa, stipite 2–7 mm longo suffulta.

Shrub to small tree, 1.5–4 m tall. Twigs ascending or spreading, blackish, brownish or grayish, somewhat wrinkled to reticulate, the younger ones ochraceous-hirsutulous or tomentose or glabrous; internodes 5–20 mm long. Petiole incrassate, 1.5–4 mm long, ca. 1.5–2 mm diam., flat to somewhat canaliculate above, blackish, ochraceous-hirsutulous to glabrous, as the twigs. Leaf blade elliptic to oblong-elliptic or obovate-elliptic, rarely oblong, 3.5–8(–12) cm long, (1.5–)2–3(–4) cm wide, coriaceous, in vivo light green with primary vein initially greenish red and, later, ochre-colored below, glabrous above, sparsely hirsutulous to glabrous below, base attenuate to decurrent on the petiole, apex rounded and often retuse or short-acuminate, margins revolute mostly toward base; primary vein flat above, prominent and densely hirsutulous below, venation brochidodromous or rarely eucamptodromous, secondary veins straight (to slightly curved), 8–11(–16) per side, ascending at 70° from perpendicular, loop-forming at acute to right angles, loops mostly distinct, enclosed by secondary arches, distance between loop and margin 2–3(–4) mm, tertiary veins reticulate, secondary and tertiary venation prominent on both sides. Inflorescences axillary, within (or just below) foliate zone, single-flowered. Peduncle 1(–2.5) mm long, 1.5–2 mm diam., tomentose or glabrous; bracts 3, soon deciduous, pellucid-dotted, the proximal one ca. 3 mm long, 1.5 mm wide. Pedicel ca. 3(–6) mm long, 1.5–2 mm diam., hirsutulous or glabrous, as the twigs. Flowers in vivo light green with ochraceous indument. Sepals triangular, 4 mm long, 3 mm wide, acute, tomentose on the abaxial side, glabrous on the adaxial side. Petals oblong to oblong-spatulate, rounded to obtuse at apex, 8–15 mm long, 5–10 mm wide, pubescent on both sides but glabrous in the lower part on the adaxial side. Stamens numerous, ca. 1.8 mm long, apex of connective flat, not umbonate, orange, anthers extrorse, outer thecae longer than the inner

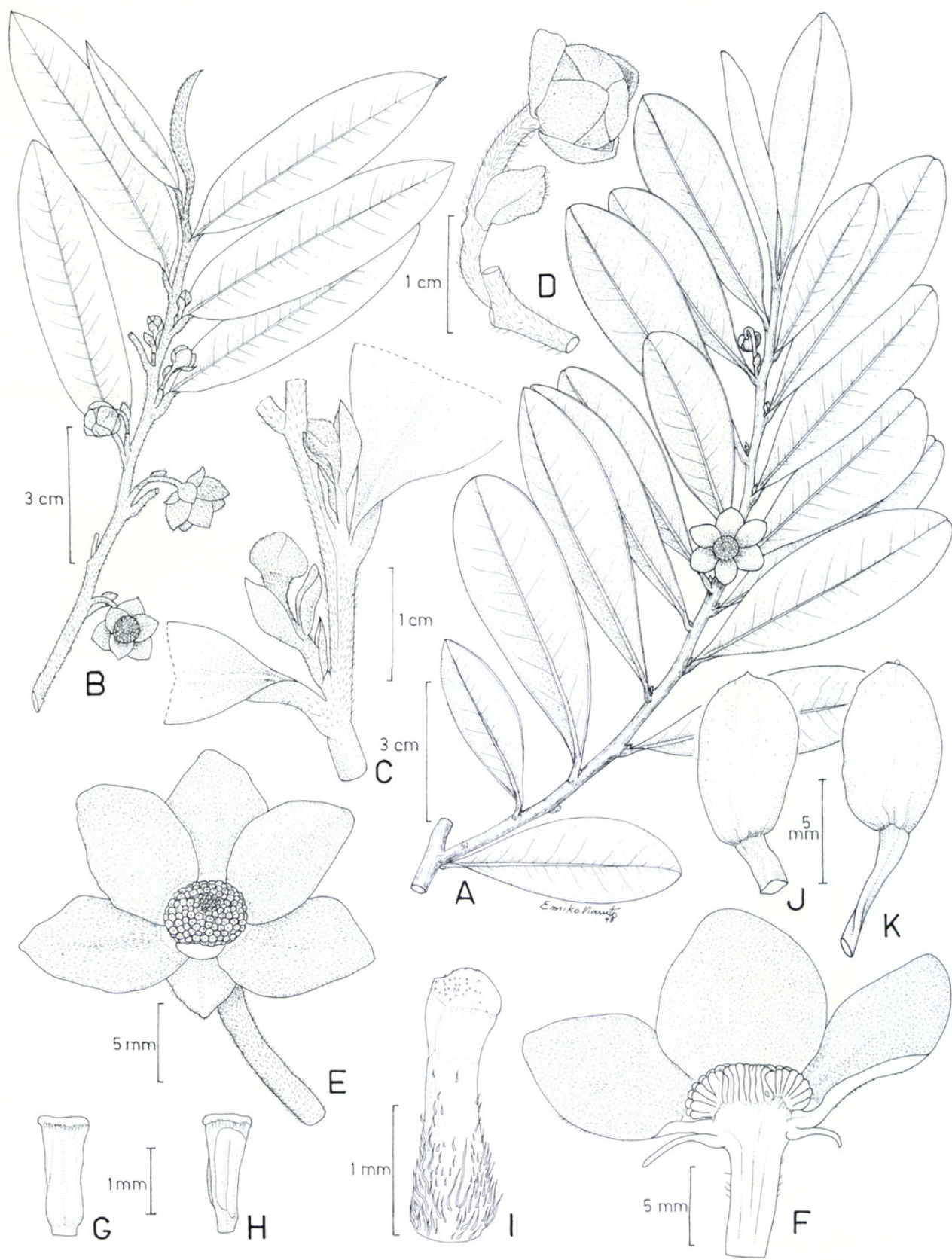


Figure 1. *Guatteria rupestris* Mello-Silva & Pirani. —A, B. Flowering shoots. —C. Branchlet with two inflorescences, each with three bracts. —D. Inflorescence before anthesis. —E. Flower at anthesis, one petal removed. —F. Longitudinal section of flower. —G, H. Stamens, adaxial and lateral views. —I. Carpel. —J, K. Monocarps. A, drawn from Pirani *et al.* CFCR 12522; B–D, drawn from Joly *et al.* CFSC 359; E–I, drawn from Freire-Fierro & Esteves 1611; J, drawn from Mello-Silva & Cordeiro CFCR 10108; K, drawn from Mello-Silva *et al.* CFCR 5419.

ones, extending almost to the base of the stamen. Carpels light green to grayish green, ca. 2 mm long, ovary minutely setose mainly at angles, style glabrous, stigma papillose. Monocarps 10–17, oblong-ellipsoid, 7–10 mm long, 3.5–5 mm diam., shortly apiculate, sparsely puberulent to glabrous, stipe 2–7 mm long, sometimes apparently articulated when dried, green when immature, purplish red at maturity, black when dried, seed filling up the entire cavity, seed-coat rugulose, chestnut-brown.

Guatteria rupestris is distinct from other species of *Guatteria* because of the following combination of characters: small, coriaceous, short-petiolate, mainly elliptic to oblong-elliptic leaves with rounded to retuse to short-acuminate apices and revolute margins, with very prominent secondary and tertiary veins on both sides; solitary flowers with equal petals; carpels with glabrous styles; monocarps 10–17 with a short stipe (2–7 mm long).

Guatteria rupestris is endemic to the southern portion of the Espinhaço range (Fig. 2). It is a shrub or small tree up to 3 m that grows in open vegetation among sandstone rocks; it grows in gallery forests as well, and there the plants tend to be larger. It occurs at Grão-Mogol, Itacambira, Serra do Ambrósio, and Serra do Cipó, all in the State of Minas Gerais.

Guatteria is originally a forest genus; the species that live in open and dry areas are rare (Morawetz, 1986). Two species from the Espinhaço range, *G. odontopetala* Martius and *G. villosissima* A. Saint-Hilaire occur exclusively in forests. Two other species, *G. pohliana* Schlechtendal ex Martius and *G. sellowiana* Schlechtendal, occur mostly in forests but have occasional “campo” populations. The populations of *G. notabilis* are found on “campo” as much as in forests. *Guatteria rupestris* tends to colonize open areas; the majority of the populations that have been found so far grow on these types of places. The following key distinguishes *G. rupestris* from the other sympatric species of *Guatteria* mentioned above.

KEY TO *GUATTERIA RUPESTRIS* AND SYMPATRIC SPECIES OF *GUATTERIA*

- 1a. Flowers terminal, monocarps sessile
..... *Guatteria notabilis*
- 1b. Flowers axillary, monocarps stipitate.
 - 2a. Adaxial side of the leaf blades glabrous, even in the young ones.
 - 3a. Leaf coriaceous, apex rounded to abruptly short-acuminate, sometimes emarginate; “campo” shrub or forest treelet *G. rupestris*
 - 3b. Leaf chartaceous, apex acuminate to

- long-acuminate; forest tree, very rarely “campo” shrub *G. pohliana*
- 2b. Adaxial side of the leaf blades, at least in the young ones, hairy all over or only on the primary vein.
 - 4a. Twigs persistently and densely ferrugineo-velutinous; adaxial side of the young leaf blades glabrous, except for the velutinous primary vein; most adult leaf blades strongly revolute
..... *G. villosissima*
 - 4b. Twigs short-tomentose to sparsely villosulous to glabrous; adaxial side of the young leaf blades tomentose or villosulous; adult leaf blades flat or slightly revolute at base.
 - 5a. Petals with acute to obtuse apex; inflorescences in foliate zone; leaf blades acute at base, adaxial side of the young ones tomentose ...
..... *G. sellowiana*
 - 5b. Petals with truncate and crenulate apex; inflorescences mostly below foliate zone; leaf blades obtuse to rounded at base, adaxial side of the young ones adpressed-villosulous *G. odontopetala*

Guatteria rupestris is more frequent at the Serra de Grão-Mogol where, as at the Serra do Cipó, forest populations are found. At Serra do Cipó, one campo collection (Joly *et al.* CFSC 359), though showing the characters typical of the species, exhibits narrowly oblong leaves. This character distinguishes it from all the other collections because the leaves in *G. rupestris*, though variable, tend to maintain a basically elliptical configuration (Fig. 2).

Guatteria rupestris and *G. notabilis* do not seem to be closely related to any taxa from southeastern Brazil. At present, it is impossible to ascribe the new species to any of the extant sections of the genus, although it exhibits some leaf similarities (e.g., leaf size, shape, venation, texture) with species of section *Sclerophyllum* R. E. Fries from northern and north-western portions of South America.

Paratypes. BRAZIL. **Minas Gerais:** Grão-Mogol, arredores, em mata da borda da chapada, 24 July 1978 (fl), *G. Hatschbach* 41573 (MBM); Grão-Mogol, campos rupestres atrás da cidade, 13 Apr. 1981 (fl), *I. Cordeiro, J. R. Pirani, L. Rossi, A. Furlan & M. C. E. Amaral* CFCR 788 (MG, SPF); Grão-Mogol, campo rupestre em direção nordeste da cidade, 16°32'S, 42°55'W, elev. 3,500 pés, 22 May 1982 (fl), *N. Hensold, M. C. H. Mamede, A. M. & N. Giuliatti* CFCR 3450 (CEPEC, R, SPF, U); Grão-Mogol, beira do Córrego das Mortes, 28 Feb. 1983 (fl, fr), *I. Cordeiro & E. Simonis* CFCR 4116 (F, SPF, U not seen); Grão-Mogol, vale do Ribeirão das Mortes, acima da cidade, elev. 910 m, carrascal, 4 Sep. 1986 (fr), *R. Mello-Silva & I. Cordeiro* CFCR 10108 (G, SPF, UEC); Grão-Mogol, vale do Ribeirão das Mortes, elev. 900 m, 23 May 1987 (fl), *R. Mello-Silva & J. R. Pirani* CFCR 10812 (BHCb, CTES, HUEFS, SPF); Grão-Mogol, Trilha da Tropa, no alto da serra, elev. ca. 1,000–

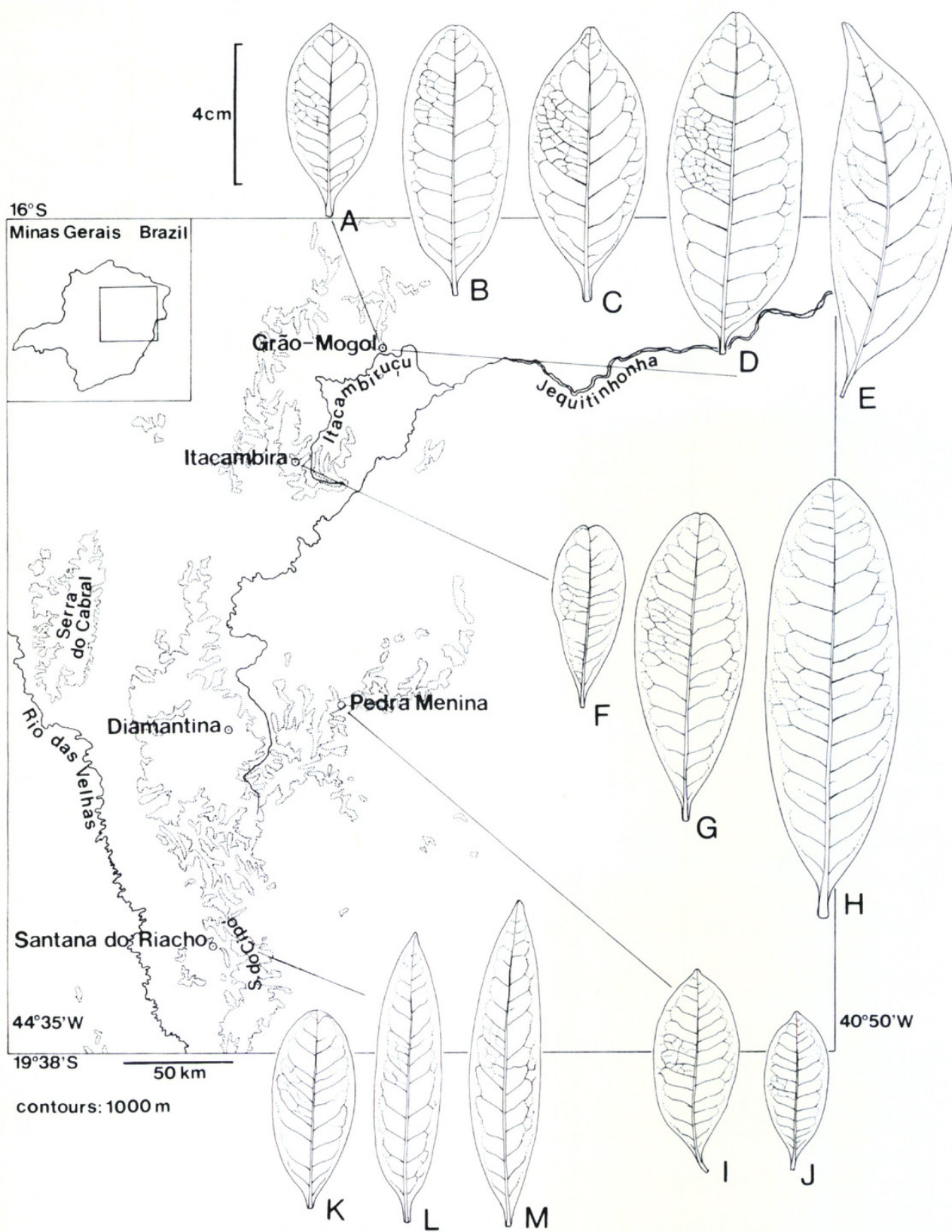


Figure 2. Espinhaço Range in Minas Gerais, Brazil, depicting variation of leaf shape along the different areas of occurrence of *Guatteria rupestris*. A, Hensold et al. CFCR 3450; B-D, Cordeiro & Simonis CFCR 4116; E, Cordeiro et al. CFCR 788; F-H, Pirani et al. CFCR 12752 (holotype); I, J, Mello-Silva et al. CFCR 5419; K, Freire-Fierro & Esteves 1611; L, M, Joly et al. CFSC 359.

1,200 m, no interior de mata ciliar, 11 Dec. 1989 (fl), *J. R. Pirani, P. T. Sano, T. R. S. Silva & A. Freire-Fierro CFCR 12522* (SP, SPF, UB); Grão-Mogol, estreito do riacho Ribeirão, elev. ca. 950 m, 16°33'S, 42°54'W, 6 Sep. 1990 (fl, fr), *J. R. Pirani, G. L. Esteves, M. T. V. A. Campos & T. R. S. Silva CFCR 13422* (IPA, SPF); Rio Vermelho, Pedra Menina, fazenda Vargem do Anjo, morro Espigão do Meio, 13 Oct. 1984 (fr), *R. Mello-Silva, M. Meguro, E. M. Isejima & J. R. Pirani CFCR 5419* (K, RB, SPF, US); Santana do Riacho, Serra do Cipó, km 137–138 da rodovia Lagoa Santa–Conceição do Mato Dentro, elev. 1,240 m, 8 June 1970 (fl), *A. B. Joly, J. Semir & Y. Ugadim CFSC 359* (SP, SPF, UEC); Santana do Riacho, Serra do Cipó, km 130 da rodovia Lagoa Santa–Conceição do Mato Dentro, ca. de 500 m da bifurcação na estrada para Morro do Pilar, em mata ciliar a 200 m da estrada, 11 Aug. 1990 (fl), *A. Freire-Fierro & G. L. Esteves 1611* (BHCB, MBM, SP, SPF).

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