

New Species of *Diplusodon* (Lythraceae) from Brazil

Taciana Barbosa Cavalcanti

National Center for Genetic Resources and Biotechnology, CENARGEN/EMBRAPA
SAIN-Parque Rural, CP 02372, CEP 70.000-970, Brasília, DF, Brazil

ABSTRACT. Eight new species and two new varieties from five Brazilian states are described and illustrated: *Diplusodon argyrophyllus* and *D. ulei* var. *ciliatus*, from Bahia; *D. alatus*, *D. ciliatiflorus*, *D. oblongus* var. *angustifolius*, *D. plumbeus*, and *D. pygmaeus* from Goiás; *D. aggregatifolius*, from Minas Gerais; *D. trigintus*, from Tocantins; and *D. mattogrossensis*, from Mato Grosso.

Since 1985, expeditions in Brazil have been undertaken to increase knowledge of the Brazilian Lythraceae (Cavalcanti, 1987, 1988, 1990; Ramos et al., 1992) and as a basis for revising the genus *Diplusodon* (Cavalcanti, 1995). These efforts resulted in the collection of many interesting plants in the family, some representing rare and endemic species. In addition to new species of *Cuphea*, some of them already published (Cavalcanti, 1989, 1991), ten taxa of *Diplusodon* were confirmed to be undescribed.

Diplusodon is a genus of about 65 species ranging throughout the continuous area of the Brazilian cerrado, with just 1 species occurring in the cerrado of Bolivia (Cavalcanti & Graham, 1996). The species occur different habitats, including gallery forest borders, grassy fields (campo limpo) with sandy soil, closed cerrado (cerrado denso) with trees and high shrubs, open cerrados (campo sujo), and fields with outcropping rocks (campo rupestre).

In general, *Diplusodon* is characterized by opposite leaves, regular, hexamerous, perigynous flowers with a floral tube, two bracteoles (prophylls), and an epicalyx of six appendages. The gynoecium is bicarpellate and unilocular with an incomplete septum. The androecium can be diplostemonous, polystemonous, or rarely haplostemonous. The fruit is a septicidal capsule with winged seeds.

The species of *Diplusodon* were first studied in detail by Koehne (1903). The most recent work, that of Lourteig (1989), described 18 new species, mainly from Minas Gerais and Goiás. The new species described here further expand the diversification of the genus both in vegetative and floral characters.

The etymology of the genus refers to the sepals of the calyx and the epicalyx of the flowers (diplus = double; odon = teeth).

Diplusodon aggregatifolius T. Cavalcanti, sp. nov. TYPE: Brazil. Minas Gerais: Grão-Mogol, às margens do córrego na saída da cidade, na estrada para o Rio Ventania, 25 Feb. 1986, Cavalcanti et al. (CFCR) 9596 (holotype, SPF; isotypes, CEN, K, MBM, NY, UEC). Figure 1.

Habitu, amplitudine formaque foliorum et numero staminum *D. ulei* appropinquat, sed hypanthio oblongo et planta omnino trichomatibus foliis evidenter ad apicem ramorum facile distinguitur.

Subshrub 0.4–2.0 m, branchlets sparse, quadrangular to subquadrangular, reddish to wine-colored, pubescent; internodes 0.5–3 cm long. Leaves petiolate, petioles 3–7 mm long; venation eucampitodromous; blades chartaceous to subcoriaceous, elliptic to obovate, rarely orbicular, 0.9–3 × 0.4–1.2 cm, apex obtuse, margin plane to rarely slightly revolute; adaxial surface pubescent, with lateral veins inconspicuous; abaxial surface pubescent, with lateral veins 2–3, visible. Inflorescences bracteose to frondose-bracteose, diplobotrys to pleiobotrys, sometimes with accessory branches; pedicels 1–2.5 mm long; bracteoles 5–7 mm long, elliptic to obovate, with base narrow and decurrent, at the apex of pedicel, reaching to the midpoint of the floral tube. Floral tube 4–5 mm long, campanulate, pubescent; sepals wine-colored, pubescent, 2–2.5 mm long; appendages cylindrical to flattened, 2–2.5 mm long, spreading, slightly reflexed; corolla 2.5–3 cm diam., petals pink, 9–12 × 6–7 mm; stamens (10–)12, exserted; ovary glabrous, rounded to obconic, 2–2.8 × 1.9–2 mm; style rose, 12–19 mm long; ovules 6–14. Capsules rounded; seeds 4–6, 3–3.2 × 2–2.2 mm.

Phenology. Flowering January to May; collected in fruit in April and June.

Distribution. Known only from the município of Grão-Mogol and surroundings, in the state of Minas Gerais. Occurring in campo rupestre vegetation between 900 and 1250 m, and in cerrado vegetation at 830 m.



Figure 1. *Diplusodon aggregatifolius* T. Cavalcanti. —A. Branch of the inflorescence. —B. Leaf, adaxial surface. —C. Detail of leaf indument. —D. Bracteole, adaxial surface. —E. Bud. —F. Flower, without petals. —G. Pistil.

Diplusodon aggregatifolius can be easily distinguished by the small elliptical leaves to 3 cm long with attenuate bases and by the pubescent stems, leaves, and flowers. The inflorescence is open and

sometimes develops accessory branches, and the flowers have 12 stamens.

Paratypes. BRAZIL. **Minas Gerais:** Grão-Mogol, arredores, 23 Apr. 1978, *Hatschbach 41409* (MBM); próxi-

mo a Grão-Mogol, 12 Apr. 1981, *Furlan et al. (CFCR)* 7471 (K, F, SPF); atrás da cidade, 13 Apr. 1981, *Cordeiro et al. (CFCR)* 776 (SPF, UB); em direção nordeste da cidade, 16°32'S, 42°55'W, 22 May 1982, *Giulietti et al. (CFCR)* 3423 (G, R, SPF); Vale do Ribeirão dos Bois, 21 May 1987, *Mello-Silva & Pirani (CFCR)* 10763 (K, SP, SPF); 22 May 1987, *Pirani & Mello-Silva* 10811 (K, R, SPF); na saída da cidade em sentido ao Rio Ventania, córrego dos Bois, 16°34'S, 42°54'W, 18 Feb. 1989, *Cavalcanti et al.* 278 (CEN, MBM, NY, SPF, UEC); Trilha dos garimpeiros, 14 June 1990, *Hatschbach & Nicolack* 54290 (MBM); estrada Grão-Mogol-Cristália, 14 Apr. 1981, *Pirani et al. (CFCR)* 904 (BHCB, SPF). **Itacambira:** estrada para Montes Claros, 9 Jan. 1986, *Cordeiro et al. (CFCR)* 9122 (K, SPF).

Diplusodon alatus T. Cavalcanti, sp. nov. TYPE: Brazil. Goiás: Alto Paraíso de Goiás, Parque Nacional da Chapada dos Veadeiros, na margem da cerca próximo à sede do IBDF, 14 Aug. 1991, *Cavalcanti et al.* 850 (holotype, CEN; isotypes, K, MBM, NY, SPF). Figure 2.

Diplusodon alato iam floribus 7 cm diam., 32–38-staminibus statim recognoscitur. A *D. sordido* Koehne caule alato et foliis maioribus, glaucis, craspedodromis amplexicaulisque differt.

Subshrubs 1–1.5 m, glabrous, branchlets subquadrangular, wine-colored to brownish, winged, the wing 1.5–2 mm wide; internodes 2–5 cm long. Leaves amplexicaulous, sessile, completely clasping the stem; venation craspedodromous; blades coriaceous, glaucous, oblong, oblanceolate, or rarely ovate, 3–9 × 2–4 cm, apex acute to obtuse, margin plane, base retuse to subcordate, lateral veins 15–27, inconspicuous. Inflorescences frondose, diplobotrys; flowers crowded on pedicels 1–2 mm long; bracteoles 5–9 × 2–5 mm, oblanceolate, reaching to the apex of the floral tube. Floral tubes 6–7 mm long, 1–2 mm wide, very fleshy, campanulate, enlarging and becoming very hard in fruit; sepals fleshy, 7–8 mm long; appendages 3–4 mm long, narrowly triangular, spreading to suberect; corolla 7 cm diam., petals pink, 30–35 × 20–22 mm, apex obtuse; stamens 32–38(–40), included; ovary glabrous, obconic, 3 × 6 mm; style 17 mm long; ovules ca. 35. Capsules rounded; seeds 37–46, 3.5–4 × 3–3.5 mm.

Phenology. Flowering in May; collected in fruit in February and October.

Distribution. Known only from the Chapada dos Veadeiros, Goiás, area, which has a largely endemic flora particularly rich in Velloziaceae, Poaceae, Xyridaceae, and Cyperaceae; in fields with rocks and white sands in the high plateau areas, 1000–1300 m.

This new species has a remarkable robust, ornamental habit, marked by brownish branchlets that are conspicuously 4-winged. The leaves are

large and glaucous, to 9 cm long, completely amplexicaulous and with many lateral veins. The flowers are the largest known for the genus at 7 cm in diameter, with nearly 40 included stamens. The floral tube, epicalyx, and sepals are fleshy; in fruit the sepals become incurved and fruits become very hard. *Diplusodon alatus* has been found growing within an area of 5 m² with *D. argenteus*, *D. oblongus* var. *ciliatus*, and *D. sordidus*.

Paratypes. BRAZIL. **Goiás:** Município de Alto Paraíso de Goiás, Chapada dos Veadeiros, estrada Alto Paraíso-Colinas do Sul, a 28 km do entroncamento da GO-118, 14°08'06"S, 47°44'04"W, 2 Apr. 1997, *Cavalcanti et al.* 2186 (CEN, KE, NY); Parque Nacional da Chapada dos Veadeiros, próximo ao rio José Jacó, 14 May 1986, *Romanic-Neto et al.* 449 (G, SP); Parque Nacional da Chapada dos Veadeiros, 14°08'S, 47°31'W, 9 May 1987, *Menezes* 1208 (SPF); Parque Nacional da Chapada dos Veadeiros, entre São Jorge e Rio Preto, 19 Oct. 1990, *Hatschbach et al.* 54781 (MBM); estrada para Colinas, a 34 km do entroncamento, 15 Aug. 1990, *Cavalcanti et al.* 681 (CEN); cerca 1 km da sede do Parque Nacional da Chapada dos Veadeiros, 7 Feb. 1987, *Pirani et al.* 1751 (K, SPF); Fazenda Mato Fundo, 16 Oct. 1990, *Hatschbach et al.* 54666 (MBM).

Diplusodon argyrophyllus T. Cavalcanti, sp. nov. TYPE: Brazil. Bahia: Abaíra, Distrito de Catolés, encosta da Serra do Atalho, em frente ao Mendonça, ca. 13°16'S, 41°49'W, 3 Apr. 1992, *Ganev* 11 (holotype, SPF; isotypes, HUEFS, K, NY). Figure 3.

Indumento argenteo *D. argenteo* appropinquat, sed foliis ovato-lanceolatis acrodromisque, hypanthio oblongo appendicibus calycis lineari-triangularibus differt.

Subshrubs 1.2 m, branchlets subquadrangular, all parts densely and finely sericeous, the trichomes simple, silvery; internodes 0.9–2 cm long. Leaves petiolate, petioles 3–7 mm long; venation eucampodromous; blades coriaceous, elliptic to ovate, rarely elliptic-lanceolate, 1.5–4 × 0.8–2 cm, apex acute, minutely acuminate, or rarely obtuse, adaxial surface olive-green, sericeous, with lateral veins furrowed; abaxial surface densely covered by silvery trichomes, with lateral veins (3–)5–7, prominent. Inflorescences frondose, triplobotrys to pleiobotrys; flowers crowded on pedicels 1.5 mm long; bracteoles 5 × 2.2–2.5 mm, spatulate, reaching the apex of floral tube. Floral tubes ca. 4.5 mm long, campanulate, densely covered by silvery trichomes; sepals 1.5–2 mm long; appendages ca. 2 mm long, erect to suberect, reaching the level of sepals; corolla 2.5–3 cm diam., petals rose, 13–14 × 7.5–8.5 mm, apex obtuse; stamens 12, slightly exerted; ovary obconic, glabrous, 2–2.2 × 3–3.2 mm; style 12–13 mm long; ovules 14–15. Mature fruits and seeds unknown.

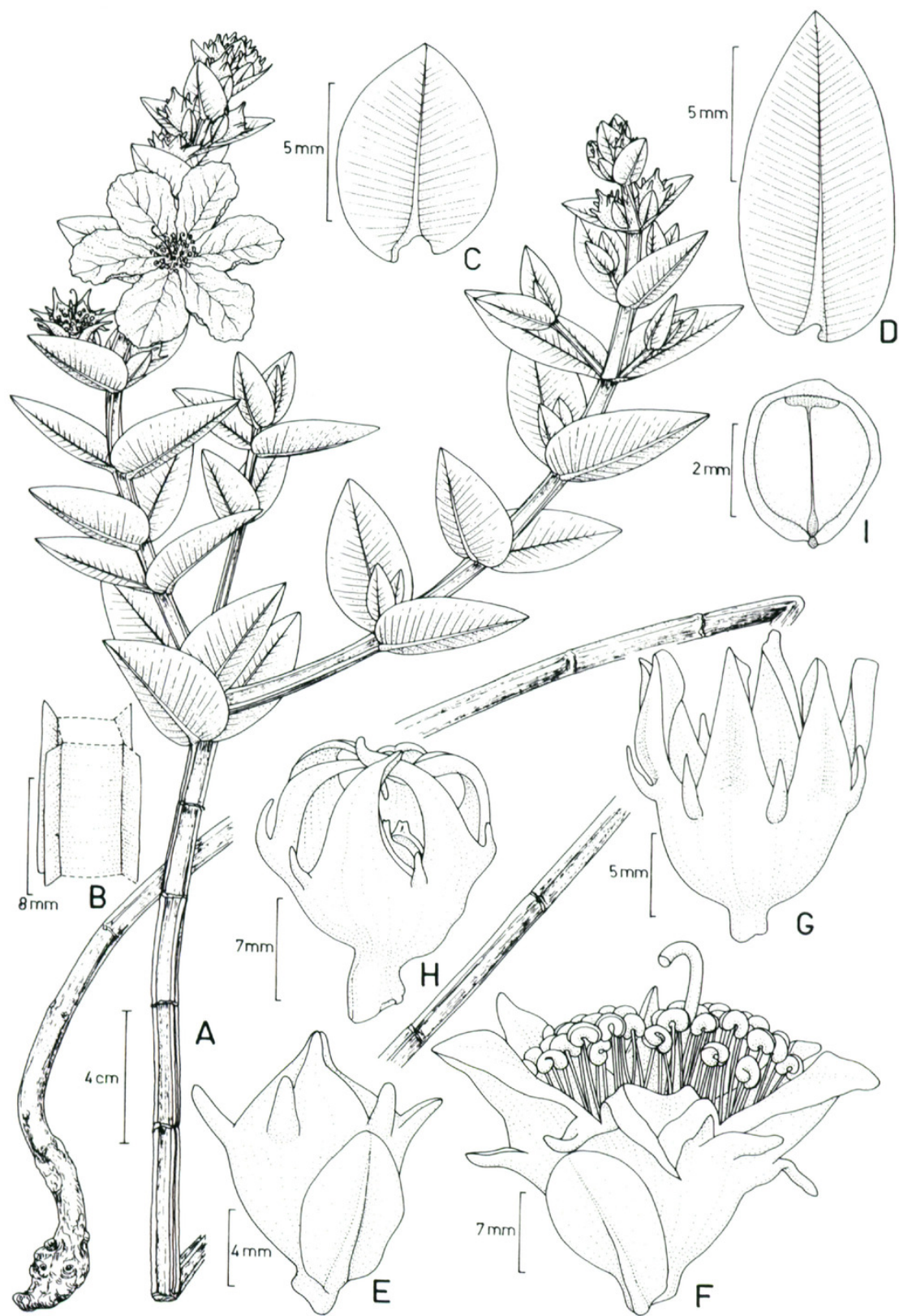


Figure 2. *Diplusodon alatus* T. Cavalcanti. —A. Habit. —B. Section of an internode. —C. Leaf, abaxial surface. —D. Leaf, adaxial surface. —E. Bud. —F. Flower, without petals. —G, H. Persistent floral tube surrounding the mature capsule. —I. Seed.



Figure 3. *Diplusodon argyrophyllus* T. Cavalcanti. —A. Branch of the inflorescence. —B. Section of an internode. —C, D. Leaves, abaxial surface. —E. Detail of leaf indument. —F. Bracteole, adaxial surface. —G. Bud. —H. Flower, without petals. —I. Appendage of epicalyx. —J. Pistil. —K. Ovary, longitudinal section. —L. Trichome of floral tube.

Phenology. Flowering in April.
Distribution. Known only from the type material, collected in Abafra, Catolés, Bahia; in campo rupestre vegetation, 1100 m.

The habit of *Diplusodon argyrophyllus* is very ornamental because it is completely covered by silvery trichomes, which contrast with the pink flowers. The silvery indument is not common in the

genus, appearing otherwise only in *Diplusodon argenteus*, from Goiás state. The leaves are 4–7 cm long, and the flowers have 12 stamens.

Diplusodon ciliatiflorus T. Cavalcanti, sp. nov.

TYPE: Brazil. Goiás: Colinas do Sul, na estrada Colinas do Sul–Usina Hidrelétrica de Serra da Mesa, 23.6 km antes de chegar na entrada da Usina, 14°12'S, 48°04'W, 8 Mar. 1992, Cavalcanti et al. 1046 (holotype, CEN; isotypes, K, NY, SPF, UB). Figure 4.

Diplusodon thysanosepalo affinis sepalis, segmentis epicalycis prophyllisque dense longeque ciliatis et androecio 20-staminibus distinguitur.

Subshrubs 0.60–2 m, branchlets glabrous, subquadrangular, slightly winged, rust-colored; internodes 1.5–4.5 cm long. Leaves subpetiolate, petioles up to 1 mm long; venation acrodromous; blades coriaceous, glabrous, slightly glaucous, oblong, sometimes brown in dry state, lanceolate to elliptic-lanceolate, the lower ones ovate-oblong, 2.5–6.5 × 1.0–2.7 cm, apex acute to obtuse, sometimes acuminate, margin plane, base obtuse to slightly subcordate, lateral veins 4–5, with 2–4 arising from the base, inconspicuous on the adaxial surface, rust-colored on the abaxial surface. Inflorescences frondose, diplobotrys to triplobotrys; bracts commonly densely ciliate; flowers sessile; bracteoles 7–12 × 3.5–4 mm, elliptic, densely ciliate with long trichomes, reaching to the apex of the floral tube. Floral tubes 7–8 mm long, campanulate, glabrous; sepals with prolonged apex, sparsely ciliate with long trichomes, 5–6 mm long, up to 9 mm long on the fruit; appendages (4–)7–8 mm long, flattened, ciliate with long trichomes, spreading to suberect; corolla 5–7 cm diam., petals lilac to violet, 26–28 × 14–15 mm, apex obtuse; stamens 19–20, exserted; ovary rhombic to obconic, glabrous, slightly furrowed, 2.5–2.8 × 3–3.2 mm; style 20–22 mm long; ovules 34–42. Capsules rounded; seeds 11–36, 3–5 × 4–4.5 mm.

Phenology. Flowering in October to December; collected in fruit in March and December.

Distribution. *Diplusodon ciliatiflorus* occurs in Serra Geral do Paranã, Goiás. The species can be found in dense cerrado with trees and high shrubs, at 730 m, or in open fields at 1400 m.

Diplusodon ciliatiflorus is exceptionally tall for the genus, typically reaching 2 m in height. The flowers are large with ciliated bracteoles, sepals, and appendages, all bearing long trichomes. The rest of the plant is completely glabrous.

The species is closely related to *Diplusodon thysanosepalus*, also from Goiás, which has acrodromous

leaf venation and only the sepals and appendages of the epicalyx ciliated. The very open inflorescence of *D. thysanosepalus* and its smaller flowers with 12 stamens also distinguish it from *D. ciliatiflorus*.

Paratypes. BRAZIL. **Goiás:** Minaçu, estrada Serra da Mesa–Colinas do Sul, mais ou menos a 24 km da entrada Sul do Canteiro de Obras da Usina Hidrelétrica de Serra da Mesa, 13°52'S, 48°8'W, 10 Dec. 1991, Walter et al. 962 (CEN); Alto Paraíso de Goiás, 20 km antes de Colinas, 8 Dec. 1988, Pereira-Neto 144 (IBGE, SPF); Parque Nacional da Chapada dos Veadeiros, próximo a cachoeira do rio Preto, perto do povoado São Jorge, 6 Feb. 1987, Pirani et al. 1693 (SPF); entre São Jorge e Rio Preto, 19 Oct. 1990, Hatschbach & Silva 54783 (MBM); Chapada dos Veadeiros, 3 Nov. 1972, Rizzo 8560 (UFG); ca. 20 km de Alto Paraíso de Goiás, 20 Mar. 1971, Irwin et al. 32760 (UB).

Diplusodon mattogrossensis T. Cavalcanti, sp.

nov. TYPE: Brazil. Mato Grosso: ca. 270 km N de Xavantina, 8 May 1968, Ratter et al. 1361 (holotype, UB; isotypes, K, NY). Figure 5H–L.

Diplusodon villosissimo maxime affinis videtur omni ex parte, attamen dimensibus maioribus, praecipue floribus, et numero staminibus ab ea diagnoscutur.

Subshrubs 0.8–1.5 m, branchlets cylindrical, all parts densely covered by long white trichomes; internodes 2–6 cm long. Leaves subpetiolate, petioles 1–2 mm long, villous; venation acrodromous; blades coriaceous, ovate-lanceolate, 4–6 × 2–4.5 cm, apex obtuse, frequently obtuse-acuminate, margin plane, base obtuse to subcordate, surfaces covered by long white trichomes, lateral veins prominent in abaxial surface; lateral veins 4–6, 2–3 arising from the base. Inflorescence frondose, botrys to diplobotrys; rarely triplobotrys; flowers on pedicels 5.5–6.5 mm long; bracteoles 16–17 × 7–8 mm, elliptic-lanceolate, surpassing the apex of floral tube. Floral tubes 8–9 mm long, campanulate, densely covered by trichomes; sepals 5.5–6 mm long; appendages 8.5–9 mm long, erect; corolla 5.5–6 cm diam., petals 23–25 mm long, apex obtuse; stamens 23–24, included; ovary obovate-depressed, glabrous, ca. 4 × 4 mm; style 11–13 mm long; ovules 52–54. Mature fruits and seeds unknown.

Phenology. Flowering in May.

Distribution. *Diplusodon mattogrossensis* was collected in Serra do Roncador, in northeastern Mato Grosso, growing in cerrado vegetation at 500 m.

The habit and some floral characteristics of *Diplusodon mattogrossensis* are similar to those of *D.*

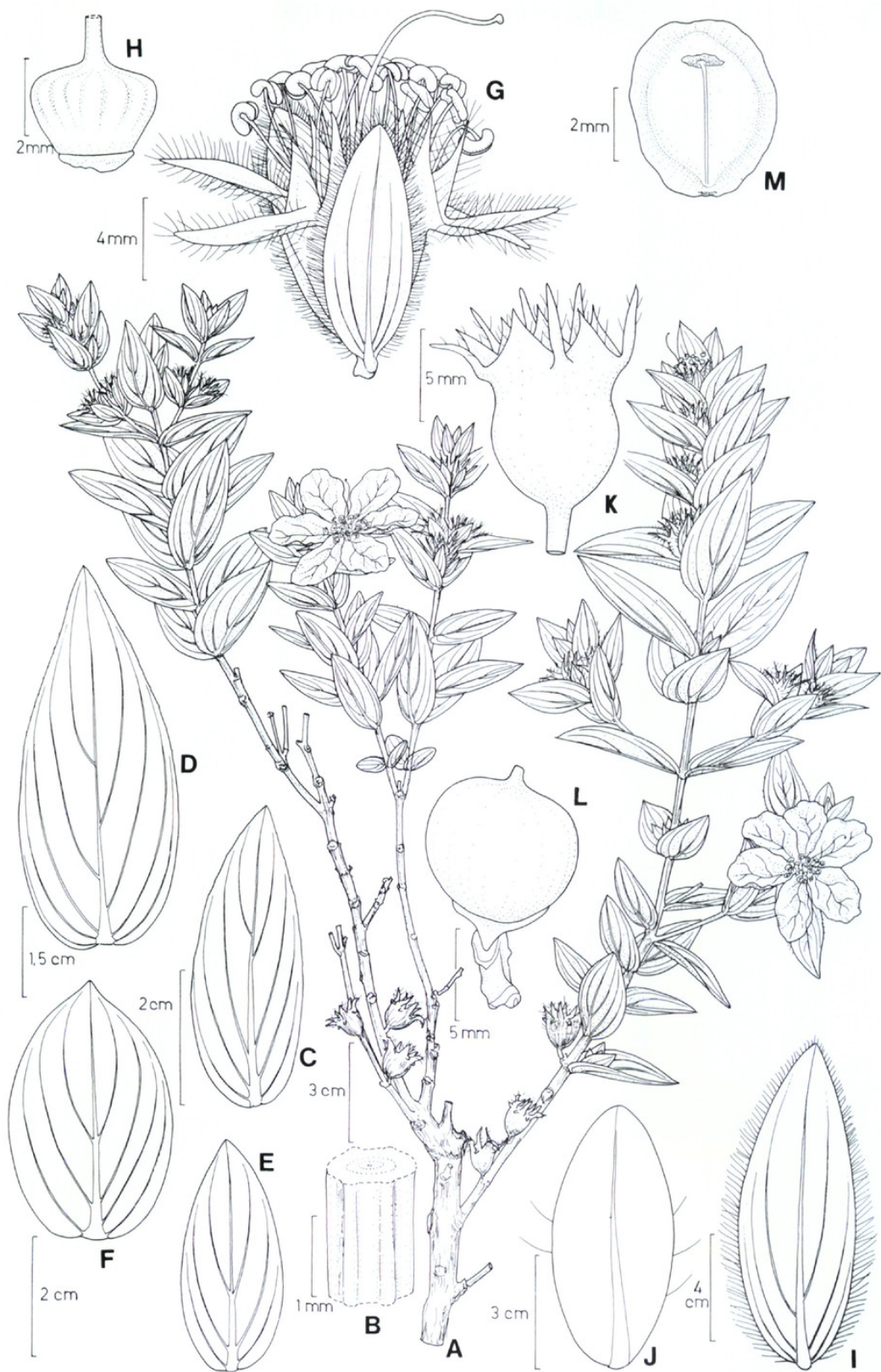


Figure 4. *Diplusodon ciliatiflorus* T. Cavalcanti. —A. Branch of the inflorescence. —B. Section of an internode. —C–F. Leaves, abaxial surface. —G. Flower, without petals. —H. Ovary. —I, J. Bracteoles, abaxial surface. —K. Persistent floral tube surrounding the immature capsule. —L. Immature capsule. —M. Seed.

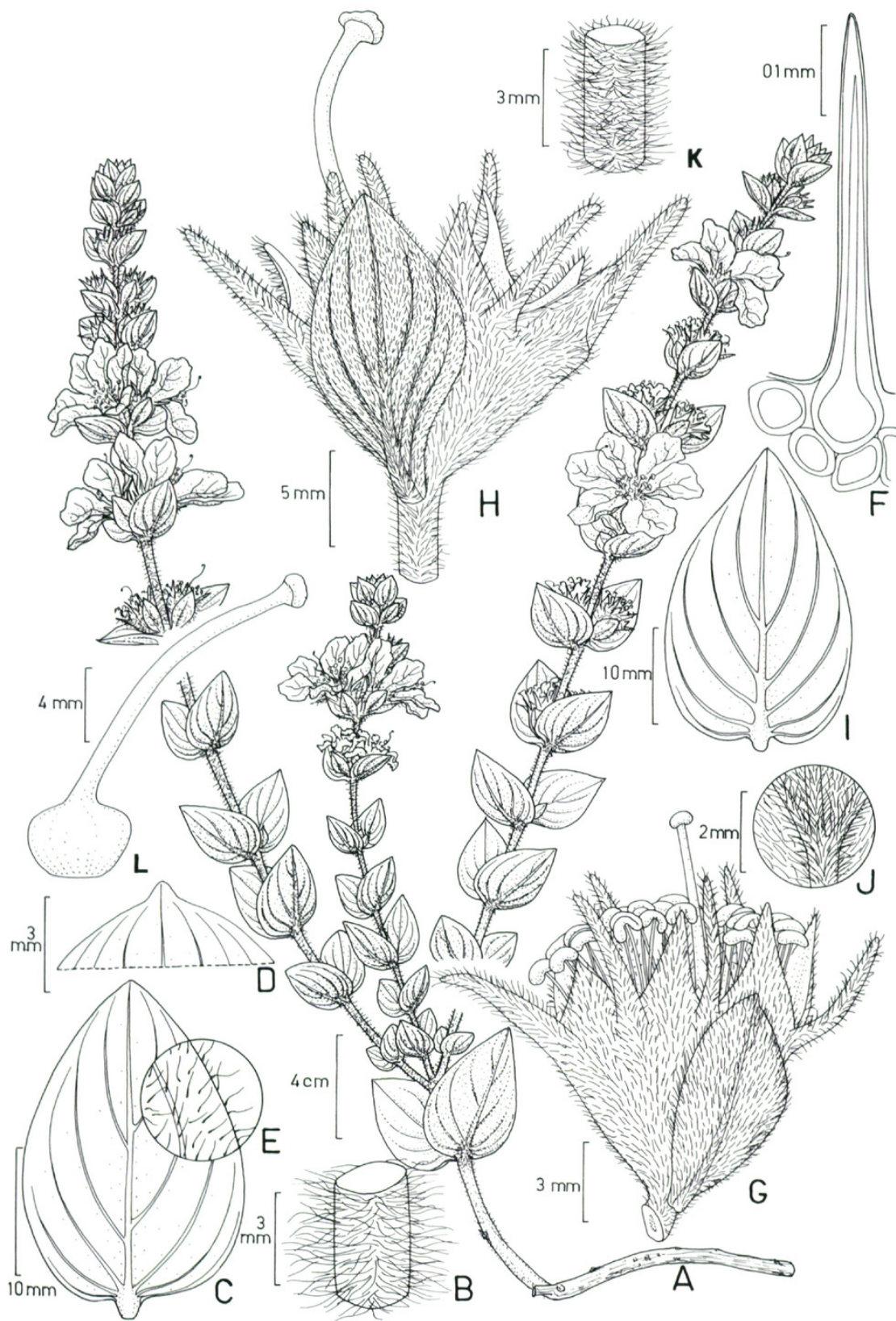


Figure 5. *Diplusodon villosissimus* Pohl. —A. Habit. —B. Section of an internode. —C. Leaf, abaxial surface. —D. Acuminate apex of the leaf. —E. Detail of leaf indument. —F. Trichome of the leaf. —G. Flower, without petals. *Diplusodon mattogrossensis* T. Cavalcanti. —H. Flower, without petals. —I. Leaf, abaxial surface. —J. Detail of leaf indument. —K. Section of an internode. —L. Ovary.

villosissimus (Fig. 5A–G), a species of Minas Gerais and São Paulo states. At first, *D. mattogrossensis* was considered a polyploid representative of *D. villosissimus*, because of the gigantism of some floral parts, which are otherwise similar to those of *D. villosissimus*. However, the species are distinctly allopatric and have different stamen numbers, which leads me to regard *D. mattogrossensis* as a new species.

Paratypes. BRAZIL. **Mato Grosso:** estrada Xavantina–Cachimbo, 200 km de Xavantina, 29 May 1966, *Hunt & Ramos 5661* (K, UB); 12°54'S, 51°52'W, ca. 270 km de Xavantina, Lagoa de Leo, 12°54'S, 51°52'W, 29 May 1968, *Ratter et al. 1574* (K, NY); Serra do Roncador, ca. 160 km N de Xavantina, 27 May 1966, *Irwin et al. 16139* (NY).

***Diplusodon oblongus* Pohl var. *angustifolius* T.**

Cavalcanti, var. nov. TYPE: Brazil. Goiás: Alto Paraíso de Goiás, cerca de 5 km depois da entrada para as cachoeiras (Vila São Jorge), 14°8'S, 47°30'W, 8 Mar. 1992, *Cavalcanti et al. 1042* (holotype, CEN).

D. oblongo var. *oblongo* foliis angustis hifodromisque segmentis epicalycis longioribus differt.

Subshrubs 0.4–2 m, branchlets subquadrangular, minutely pilose, the trichomes inconspicuous; internodes 0.5–1 cm long. Leaves sessile, minutely pilose; venation hyphodromous; blades coriaceous, narrowly-oblong, 0.7–3 × 0.3–0.5(–0.8) cm, apex acute, margin plane, thick, base acute, attenuate, lateral veins 0–1(–2), inconspicuous. Inflorescences frondose, triplobotrys to pleiobotrys; flowers sessile; bracteoles 5–6 × 1.5–2 mm, oblong, angled, margin plane, apex strongly acute, base retuse, minutely pilose, reaching the apex of the floral tube, sometimes surpassing it. Floral tubes 5–6.5 mm long, oblong, indument inconspicuous, appearing glabrous, sepals 1.5–2 mm long; appendages 4–5.5 mm long, cylindrical, spreading to suberect; corolla lilac; stamens 12, exserted; style exserted; ovules 14–16. Capsules oblong.

Phenology. Flowering in March. Some fruits found in March.

Distribution. Known only from the type from Chapada dos Veadeiros, Goiás.

This new variety is based on the presence of narrow leaves; the general shape of the leaves of *D. oblongus* var. *oblongus* is ovate to ovate-lanceolate. In addition, the leaves of the new variety are generally hyphodromous, the flowers have angled bracteoles, and the appendages of the epicalyx are longer than in the typical variety, surpassing the sepals by about 3 mm.

Paratypes. BRAZIL. **Goiás:** Alto Paraíso de Goiás, Parque Nacional da Chapada dos Veadeiros, na margem da cerca, próximo à sede (8 km), 14°12'S, 47°52'W, *Cavalcanti et al. 851* (CEN); Chapada dos Veadeiros, estrada Alto Paraíso–Colinas do Sul, a 28 km do entroncamento da GO-118, 14°10'S, 47°47'W, 2 Apr. 1997, *Cavalcanti et al. 2188* (CEN, KE, NY); Chapada dos Veadeiros, estrada Colinas-GO-118, km 42, GO-327, 14°10'S, 47°44'W, 8 Mar. 1989, *Cavalcanti et al. 401* (CEN); entrada do Parque Nacional da Chapada dos Veadeiros (à esquerda), estrada Alto Paraíso–Colinas do Sul, 34 km da GO 118, 27 Jan. 1997, *Walter et al. 3646* (CEN, SPF).

***Diplusodon plumbeus* T. Cavalcanti, sp. nov.**

TYPE: Brazil. Goiás: Cristalina, a 5 km N de Cristalina, 17 Apr. 1994, *Cavalcanti & Ayres 1267* (holotype, CEN; isotypes, F, K, MBM, NY, R, SPF). Figure 6.

Foliis lanceolatis acrodromisque *D. helianthemifolio* var. *pemphoideo* appropinquat, sed hypanthio frutuque oblongis differt.

Subshrubs 0.4–1.2 m, branchlets cylindrical, covered by stellate trichomes; internodes 0.3–1 cm long. Leaves sessile; venation acrodromous; blades coriaceous, narrowly lanceolate, 0.6–2 × 0.3–0.6 cm, apex acute, margin revolute, base ovate, adaxial surface glabrous, shining, dark gray in dry state, abaxial surface with dense, white trichomes, lateral veins furrowed, 4–5, 2–3 arising from the base, very close to each other, almost parallel, glabrous, rust-colored in dry state. Inflorescences frondose, triplobotrys; flowers subsessile; bracteoles 4–4.5 × 2.2–2.5 mm, elliptic to obovate with margin plane, almost glabrous, reaching the apex of the floral tube, sometimes surpassing it. Floral tubes 4–5 mm long, reddish, wine to brown in fruit, oblong, indument inconspicuous, appearing glabrous; sepals 2–2.5 mm long; appendages of the epicalyx 2–2.5 mm long, cylindrical, spreading; corolla 3–3.5 cm diam., petals pink, 15–17 × 10–12 mm; stamens 12, exserted; ovary obconic, glabrous, 1.5–1.8 × 2–2.5 mm; style 10–12 mm long; ovules 15–21. Capsules oblong; seeds 5–13, 2.5–3 × 2–2.5 mm.

Phenology. Flowering January to March. Collected in fruit in April and November.

Distribution. *Diplusodon plumbeus* was found in the município of Cristalina, Goiás, in cerrado and campo rupestre vegetation with rock outcroppings, 1070–1250 m.

Diplusodon plumbeus is characterized by narrowly lanceolate leaves and acrodromous venation with the lateral veins very close and almost parallel. The leaves are discolorous with the adaxial surface glabrous, bright dark-green in nature and dark gray in

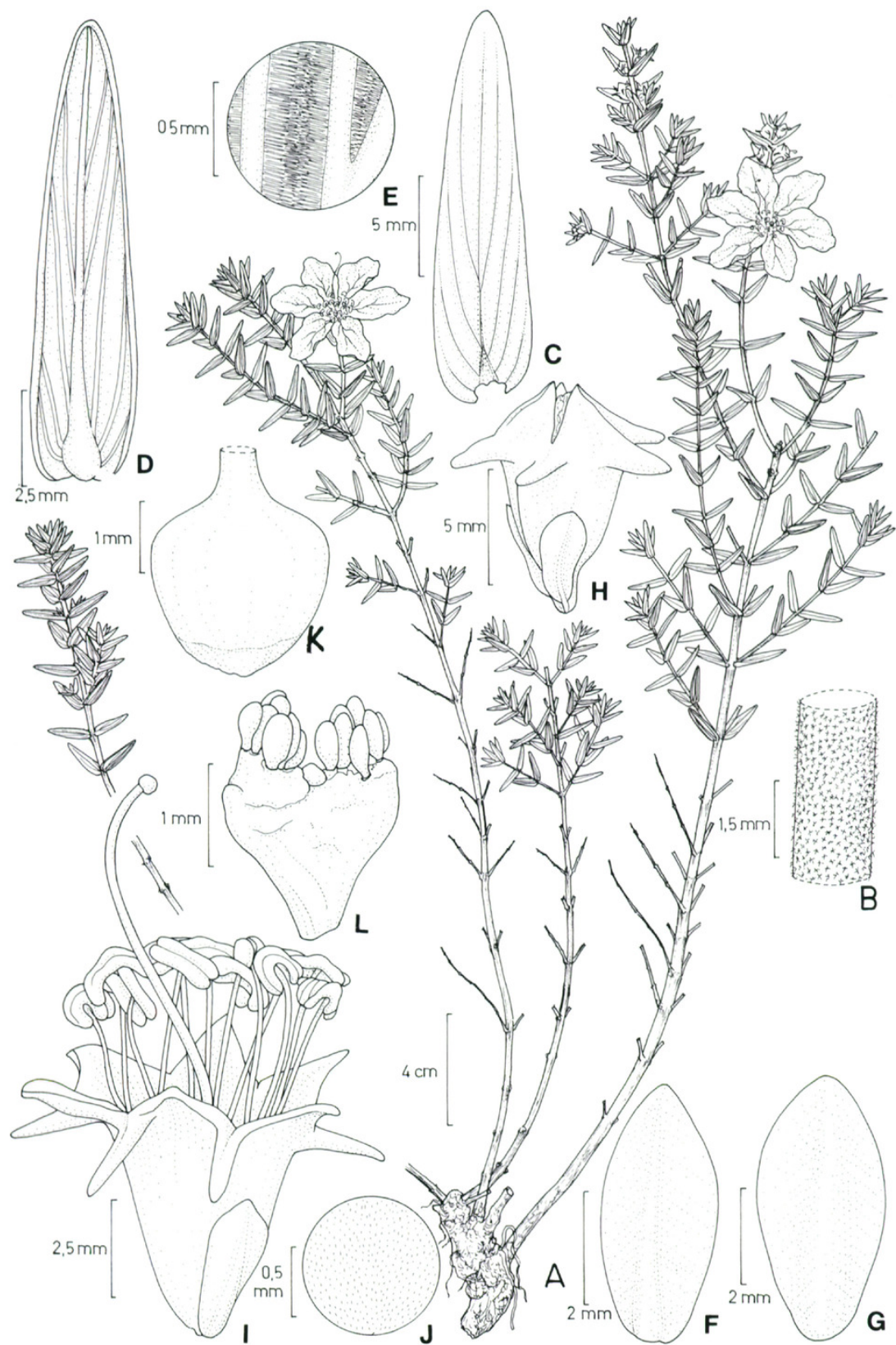


Figure 6. *Diplusodon plumbeus* T. Cavalcanti. —A. Habit. —B. Section of an internode. —C. Leaf, adaxial surface. —D. Leaf, abaxial surface. —E. Detail of leaf indument. —F, G. Bracteoles, adaxial surface. —H. Bud. —I. Flower, without petals. —J. Detail of floral tube indument. —K. Ovary. —L. Placenta.

the dry state. The abaxial surface is very white with stellate trichomes, which are absent on the veins. A very peculiar characteristic of *D. plumbeus* and a small number of other species in the genus is the oblong floral tube that is slightly narrowed in the apex.

Diplusodon helianthemifolius var. *pemphoides* is closely allied but differs by the lanceolate shape of the leaves, acrodromous venation, with 2–3 lateral veins not close or parallel and covered by stellate trichomes. The variety also differs from *D. plumbeus* by its small flowers with a campanulate floral tube, the appendages of the epicalyx deflexed, and a rounded capsule.

Paratypes. BRAZIL. **Goiás:** Cristalina, BR-040, Brasília–Cristalina, km 102, 16°48'S, 47°37'W, 12 Mar. 1989, *Cavalcanti et al.* 411 (CEN, SPF); estrada para Salto do Arrojado, 10 Feb. 1990, *Hatschbach et al.* 53751 (MBM); Serra do Cristais, 21 Feb. 1975, *Hatschbach et al.* 36396 (MBM); 3 km N de Cristalina, 2 Mar. 1966, *Irwin et al.* 13258 (NY, UB); ca. 5 km da cidade, na estrada para Paracatu, 16°46'S, 47°37'W, 4 Feb. 1987, *Pirani et al.* 1512 (CEN, F, K, MBM, NY, SPF, UB); 5 km S de Cristalina, 1 Nov. 1965, *Irwin et al.* 9737 (NY).

***Diplusodon pygmaeus* T. Cavalcanti, sp. nov.**

TYPE: Brazil. Goiás: Alto Paraíso de Goiás, estrada vicinal à esquerda, a 5 km S de Alto Paraíso de Goiás no sentido Brasília, GO-118, Serra da Baliza, no topo do morro, 14°11'S, 47°45'W, 15 Mar. 1995, *Cavalcanti et al.* 1363 (holotype, CEN, isotypes, F, K, MBM, NY, SPF). Figure 7.

Habitu pro genera minimo inter affines facile recognoscitur.

Diminutive subshrubs, 3–11 cm, caespitose, branchlets cylindrical, wine-colored, subsericeous, covered by white trichomes; internodes 0.5–1.5 cm long. Leaves petiolate, petioles 1–2 mm long; venation acrodromous, reticulate; blades subcoriaceous, with sparse, white trichomes, ovate to elliptic, 1.0–2.5 × 0.7–1.5 cm, apex obtuse, slightly acuminate, margin plane, ciliate, base obtuse to subcordate, lateral veins prominent, 3–4, 2 arising from the base, tertiary veins conspicuous. Inflorescences frondose, botrys; flowers on pedicels 1–3 mm long; bracteoles 7–8 × 2–3 mm, elliptic, apex acute, margin plane, base acute, reaching the midpoint or up to the apex of floral tube, sometimes surpassing it. Floral tubes 9–10 mm long, base green, apex wine-colored, narrowly oblong, sericeous; sepals ciliate, sericeous, 4–5 mm long; appendages of the epicalyx wine-colored, sericeous, 4–5 mm long, cylindrical, erect;

corolla 3 cm diam., petals pink, obovate; stamens 12, included; ovary obovate, glabrous, 3.5–4 × 2.5–3 mm; style 12–13 mm long; ovules 11–14. Capsules oblong in immature state; seeds unknown.

Phenology. Flowering in March.

Distribution. Known only from Serra da Baliza, Chapada dos Veadeiros, Goiás, collected in a grassy field, rocky soil; 1500 m.

The specific epithet was chosen in reference to the unique diminutive habit of this species. The individuals have short vegetative branches and a large, hard, underground xylopodium. The flowers are the size typical of most species of the genus, but the shape of the floral tube is rare, being narrow and oblong. The capsules are also oblong, rather than globose as is more common in the genus.

Paratype. BRAZIL. **Goiás:** Alto Paraíso de Goiás, Chapada dos Veadeiros, estrada de terra a leste, subindo na Serra da Baliza, nas terras do Sr. Paulo, no alto do morro, perto da casinha abandonada, 14°09'35"S, 47°28'83"W, 2 Apr. 1997, *Cavalcanti et al.* 2194 (CEN, KE, NY).

***Diplusodon trigintus* T. Cavalcanti, sp. nov.**

TYPE: Brazil. Tocantins: Ponte Alta do Norte, de Porto Nacional para Ponte Alta do Norte, 20 km de Ponte Alta, 13 June 1974, *Rizzo* 9904 (holotype, UFG). Figure 8.

Ab omnibus speciebus generis segmentis epicalycis prophyllisque valde redactis et floribus 30–32-andris optime distincta.

Glabrous subshrubs, ca. 0.8 m, branchlets subquadrangular, slightly winged, reddish; internodes 1.5–2 cm long. Leaves sessile; venation acrodromous, reticulate; blades coriaceous, glaucous, ovate-lanceolate, 1.5–2.5 × 1.0–1.8 cm, apex acute, margin plane, base obtuse, lateral veins 3–4. Inflorescences frondose-bracteose, diplobotrys; flowers on pedicels 6–7 mm long, persistent; bracteoles 1.5–2 × 1–1.1 mm, oblong to elliptic, margin plane, apex obtuse, base retuse, reaching just to the base of floral tube. Floral tubes 4–5 mm long, campanulate; sepals 2.5–3 mm long; appendages 0.3–0.5 mm long, spreading; corolla violet; stamens 30–32, slightly exerted; ovary rhombic, glabrous, 2–2.2 × 3–3.5 mm; style 14–15 mm long; ovules ca. 16. Capsules rounded; seeds ca. 4, 2–2.5 × 2–2.2 mm.

Phenology. Flowering in June.

Distribution. Known only from the type material, collected at Ponte Alta do Norte, state of Tocantins, in cerrado vegetation.

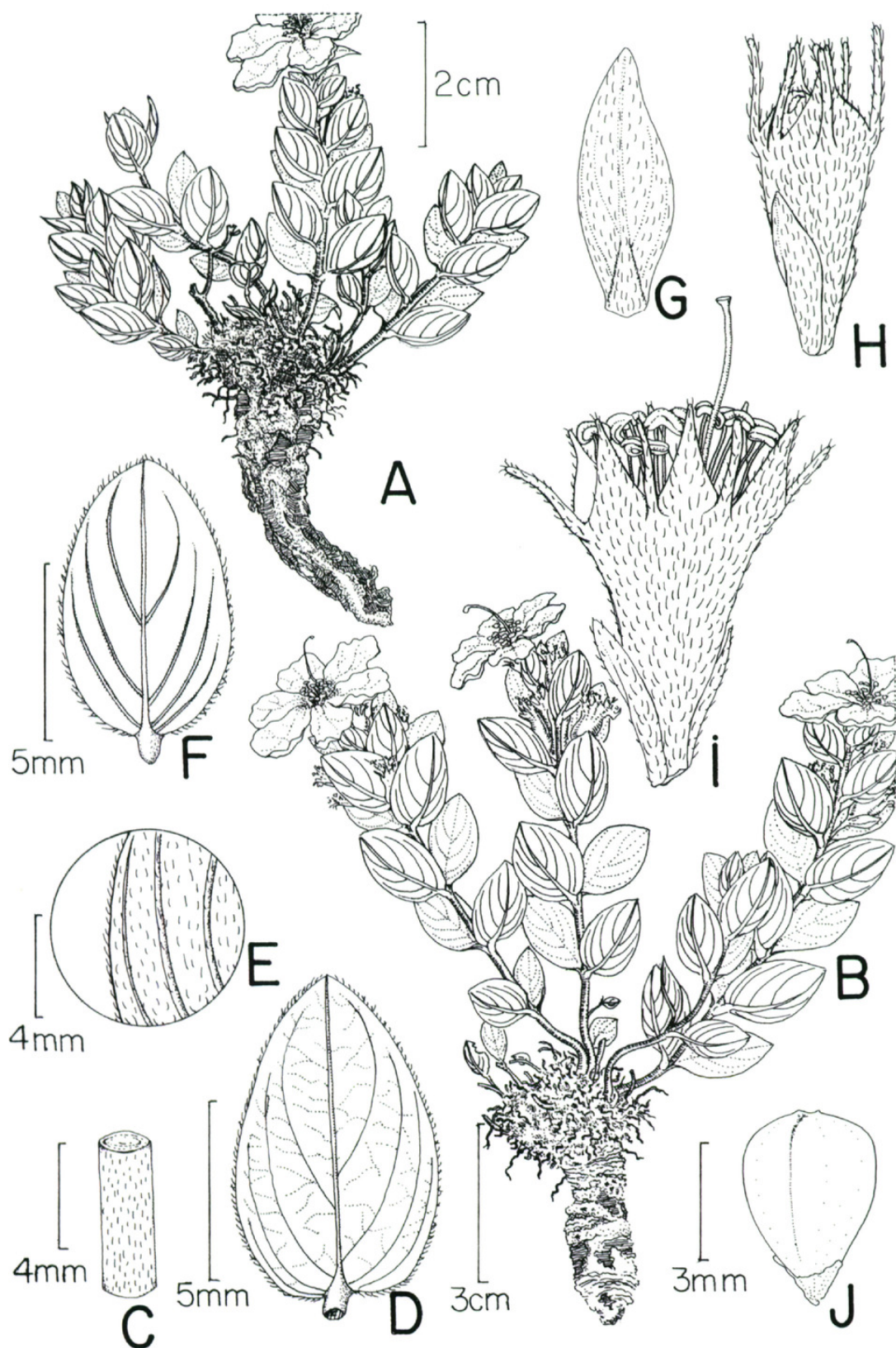


Figure 7. *Diplusodon pygmaeus* T. Cavalcanti. —A, B. Habit. —C. Section of an internode. —D. Leaf, abaxial surface. —E. Detail of leaf indument. —F. Leaf, abaxial surface. —G. Bracteole, adaxial surface. —H. Bud. —I. Flower, without petals. —J. Immature capsule.

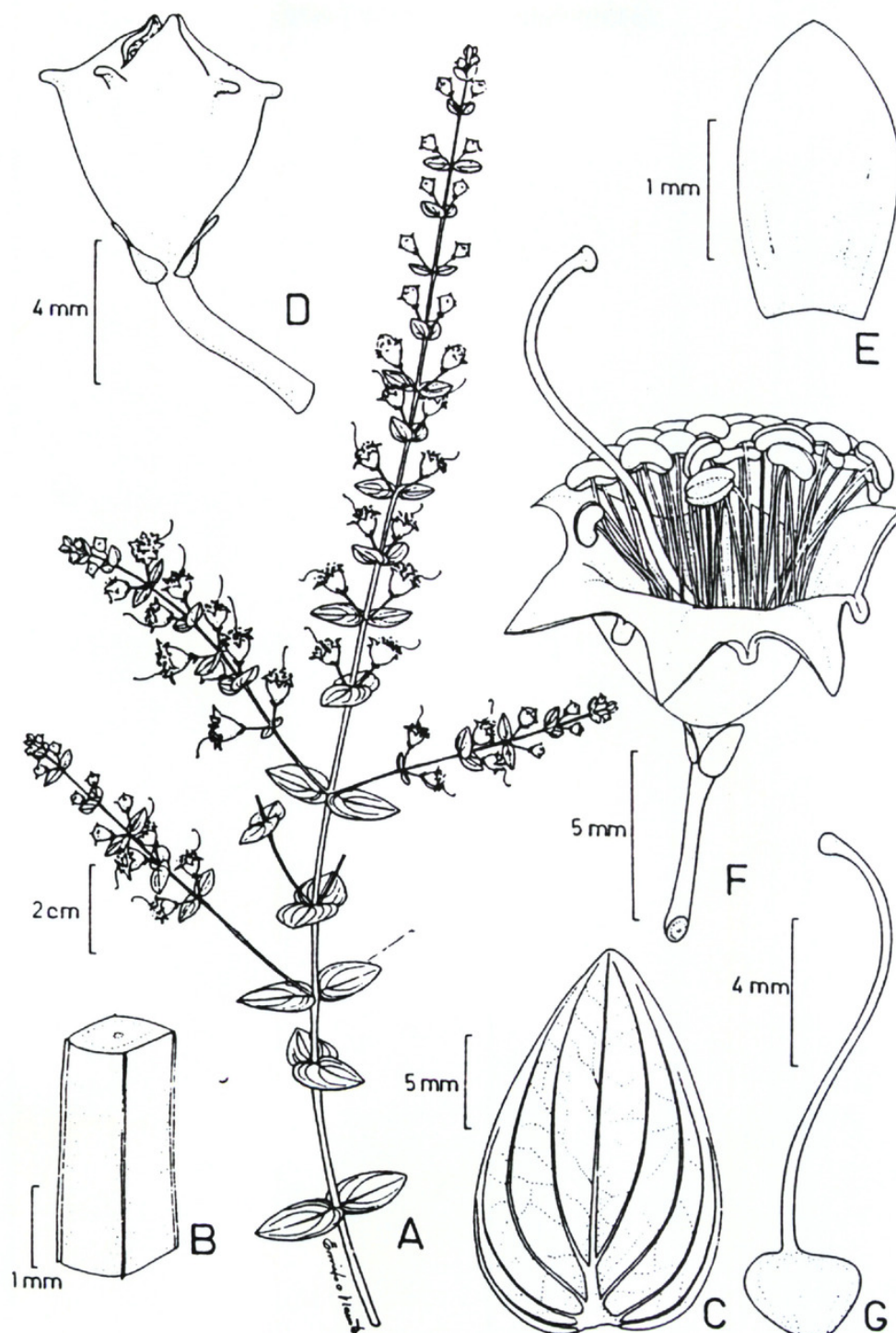


Figure 8. *Diplusodon trigintus* T. Cavalcanti. —A. Branch of the inflorescence. —B. Section of an internode. —C. Leaf, abaxial surface. —D. Bud. —E. Bracteole, adaxial surface. —F. Flower, without petals. —G. Pistil.

Diplusodon trigintus has ovate-lanceolate leaves, with acrodromous venation and conspicuous second and third lateral veins. The main characteristics are the very small prophylls, which do not reach the floral tube, persistent pedicels, reduced appendages, and 30–32 stamens. The habit is similar to *D. rotundifolius*, from Minas Gerais, but the flower of *D. rotundifolius* has 12 stamens and large prophylls that cover the entire floral tube.

***Diplusodon ulei* Koehne var. *ciliatus* T. Cavalcanti, var. nov.** TYPE: Brazil. Bahia: Lençóis, arredores da cidade, July 1992, *Cavalcanti & Ayres* 1260 (holotype, CEN; isotypes, NY, SPF). Figure 9H–N.

Proxime affinis est *D. ulei* var. *ulei*, a qua segmentis epicalycis sepalisque brevioribus et inflorescentia thyrsoida differt.

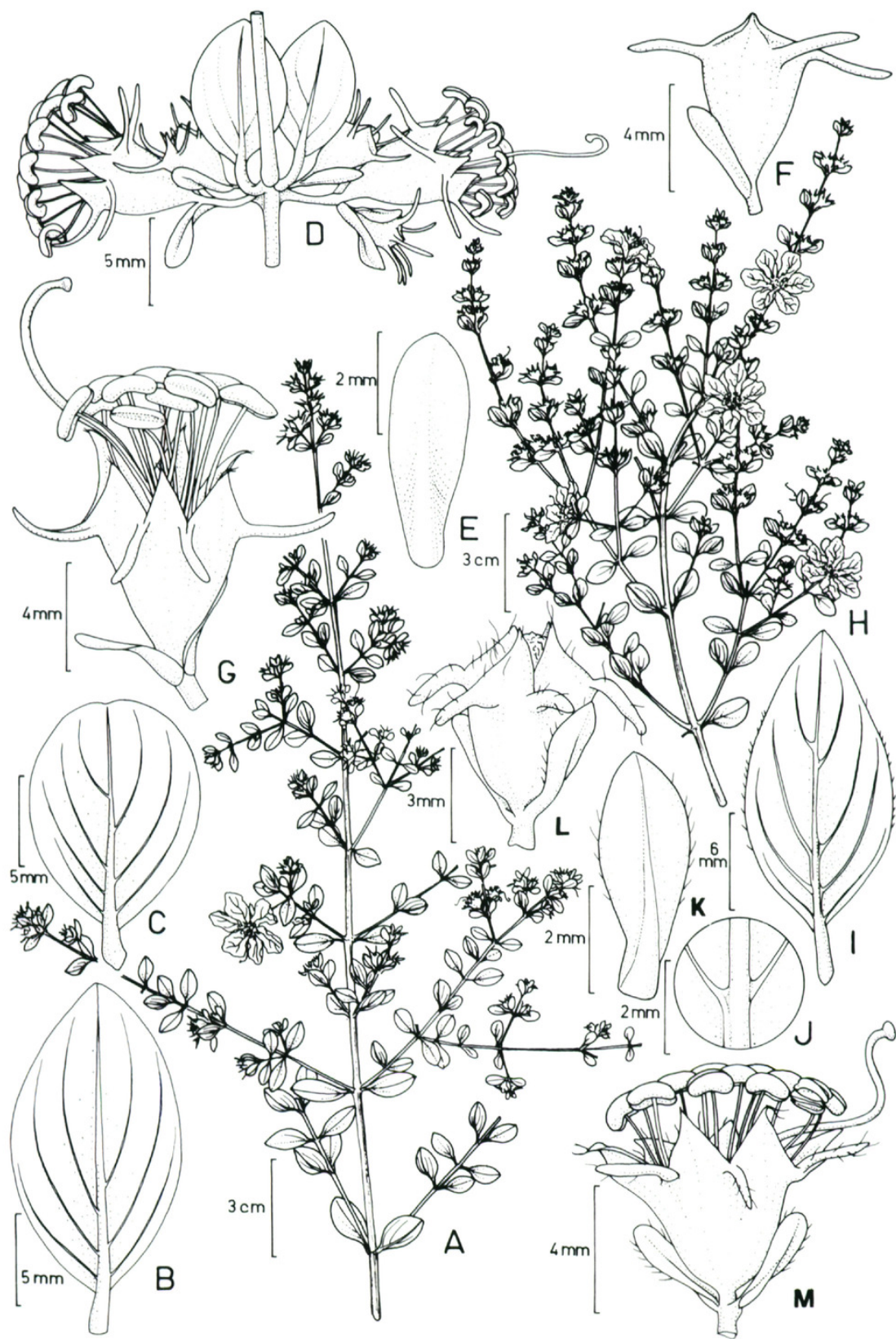


Figure 9. *Diplusodon ulei* var. *ulei*. —A. Branch of the inflorescence. —B, C. Leaves, abaxial surface. —D. Detail of inflorescence (cyme). —E. Bracteole, adaxial surface. —F. Bud. —G. Flower, without petals. *Diplusodon ulei* var. *ciliatus*. —H. Branch of the inflorescence. —I. Leaf, abaxial surface. —J. Detail of the leaf. —K. Bracteole, adaxial surface. —L. Bud. —M. Flower, without petals.

Subshrubs 1–2 m, branchlets quadrangular, glabrous; internodes 0.8–2.5 mm long. Leaves petiolate, petioles 3–5 mm long; venation eucamptodromous; blades chartaceous, ovate-elliptic, rarely obovate, $1.0\text{--}3.5 \times 0.5\text{--}2.3$ cm, apex acute, margin plane to slightly revolute, ciliate, base acute, rarely obtuse; abaxial surface with 3–5 prominent lateral veins; domatia visible. Inflorescence frondose to frondose-bracteose, diplobotrys to triplobotrys to thyrses, with accessory branches; pedicels 2.5–3.5 mm long; bracteoles $3.5\text{--}4.4 \times 1.5\text{--}2$ mm, spatulate, ciliate, reaching from the midpoint to the apex of floral tube. Floral tubes 4.5–5 mm long, campanulate, wine to dark wine; sepals violet, ciliate, 3.5–4 mm long; appendages flat, ciliate, 3.0–3.5 mm long, spreading to slightly deflexed; corolla pink, 2.5–3 cm diam., petals $12\text{--}15 \times 8\text{--}10$ mm, apex obtuse; stamens 12, exserted; style 11–14 mm long; ovary rhombic to obconic, glabrous, $2\text{--}2.2 \times 2.5$ mm; ovules 14–17. Mature fruits and seeds unknown.

Phenology. Flowering in April to June; collected in fruit in July.

Distribution. *Diplusodon ulei* var. *ciliatus* was found in the mountains of Chapada Diamantina, Bahia, municípios of Andaraí, Lençóis, and Mucugê, in rock outcrops of campo rupestre vegetation, 800–1000 m.

Diplusodon ulei var. *ciliatus* is distinguished by its ovate-elliptic leaves with acute apices and thin, ciliate margins, and by the lateral veins prominent on the abaxial surface. Bracteoles, sepals, and appendages are ciliate and shorter than *D. ulei* var. *ulei*. The inflorescence, presenting cymes of triads, is a thyrses. *Diplusodon ulei* var. *ulei* (Fig. 9A–G) is totally glabrous, has orbiculate to ovate leaves with the apex generally obtuse, a thickened margin, and inconspicuous lateral veins on both surfaces. The inflorescence has accessory branches.

Paratypes. BRAZIL. **Bahia:** Andaraí, rodovia Anda-

raí–Mucugê, km 30, 20 May 1989, Mattos-Silva et al. 2808 (CEPEC); Lençóis, BR-242, ca. 15 km NW de Lençóis, km 225, 10 June 1981, Mori & Boom 14260 (CEPEC, K, NY), Mori & Boom 14289 (K, NY); ca. 5 km N de Lençóis, 13 June 1981, Mori & Boom 14404 (CEPEC, K, NY); caminho de Lençóis para Barro Branco, ca. 8 km de Lençóis, 27 Apr. 1992, Queiróz et al. 2754 (CEPEC, HUEFS); Morro do Pai Inácio, BR-242 W de Lençóis, km 232, 12 June 1981, Mori & Boom 14373 (CEPEC, K, NY).

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