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A revision of neotropical *Diospyros* (Ebenaceae): part 11

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Abstract

In the course of a revision of the New World Ebenaceae for "Flora Neotropica" and some regional floras, specimens from ca. 100 herbaria have been studied. The South American *Diospyros coccolobifolia* MART. ex MIQ. (synonym: *D. araripensis* CAVALCANTE), *D. hassleri* HIERN, *D. lasiocalyx* (MART.) B.WALLN. (basionym: *Annona lasiocalyx* MART., synonyms: *D. burchellii* HIERN, *D. coccolobifolia* var. *pubescens* HOEHNE, *D. hispida* A.DC., *D. hispida* var. *camporum* WARM., *D. mattogrossensis* HOEHNE), and *D. ovalis* HIERN are here described in detail. Lectotypes for seven taxa have been selected. Figures, three distribution maps, vernacular names, information on habitat, ecology and biology, lists of specimens, and an identification key for the *D. lasiocalyx*-group are included.

Key words: Ebenaceae, *Diospyros araripensis*, *D. burchellii*, *D. coccolobifolia*, *D. coccolobifolia* var. *pubescens*, *D. hassleri*, *D. hispida*, *D. hispida* var. *camporum*, *D. lasiocalyx*, *D. mattogrossensis*, *D. ovalis*, *Annona lasiocalyx*, revision, taxonomy, distribution map, Flora of South America.

Zusammenfassung

Im Rahmen einer Revision der neuweltlichen Ebenaceae für "Flora Neotropica" und einige Regionalfloren konnten Herbarbelege aus ca. 100 Herbarien studiert werden. Die südamerikanischen Arten *Diospyros coccolobifolia* MART. ex MIQ. (Synonym: *D. araripensis* CAVALCANTE), *D. hassleri* HIERN, *D. lasiocalyx* (MART.) B.WALLN. (Basionym: *Annona lasiocalyx* MART., Synonyme: *D. burchellii* HIERN, *D. coccolobifolia* var. *pubescens* HOEHNE, *D. hispida* A.DC., *D. hispida* var. *camporum* WARM., *D. mattogrossensis* HOEHNE) und *D. ovalis* HIERN werden eingehend beschrieben. Lectotypen für sieben Taxa werden ausgewählt. Abbildungen, drei Verbreitungskarten, Volksnamen, Angaben zum Habitat, zur Ökologie und Biologie, Listen der gesehenen Herbarbelege, sowie ein Bestimmungsschlüssel für die Artengruppe von *D. lasiocalyx* werden präsentiert.

Introduction

In the Americas, the Ebenaceae are represented by the genera *Diospyros*, with about 100–130 species, and *Lissocarpa* with eight species. In the course of the ongoing revision of the Ebenaceae for "Flora Neotropica", the following contributions were already published: WALLNÖFER 1999, 2000, 2001a, 2001b, 2003, 2004a, 2004b, 2004c, 2005, 2007–2017, 2008a, 2008b, 2010a, 2010b, 2010c, 2012, 2015a, 2015b, WALLNÖFER & MORI 2002, ESTRADA & WALLNÖFER 2007, and WALLNÖFER & CHÁVEZ 2014 (see also DUANGJAI et al. 2006, 2009).

Note: Additions are given in brackets; coordinates given in brackets were determined during this revision; acronyms of herbaria according to THIERS (2017); data from herbarium labels are cited here in a standardized way; – abbreviations: defl = deflorate;

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fl = flowering; flbuds = with flower buds; fr = fruiting; st = sterile; yfr = with young fruits; carp = fruit in the carpological collection; n.s. = not seen; s.n. = without number; s.d. = without date; s.coll. = without collector; s.lat. = sensu lato; s.str. = sensu stricto; 2× = 2 sheets.

Key for the *Diospyros lasiocalyx* group

1 Suffrutescent plant with annual, unbranched shoots and a xylopodium (woody rootstock), already flowering when ca. 15 cm tall; – Brazil (Mato Grosso do Sul) and eastern Paraguay ..... *D. hassleri*

1* Shrubs or trees with perennial, branched shoots 2

2 Richly branched shrub not exceeding 0.6 (–1) m; leaf lamina ovate, elliptic or sometimes ± circular, up to 4.5 (–6.3) cm long and up to 2.5 (–3) cm wide; – eastern Brazil ..... *D. ovalis*

2* Plants usually much taller (if fertile shrubs, then leaves much larger) 3

3 Young twigs densely hairy distally; leaves with ± patent or sometimes appressed to spreading hairs on both sides when mature and young, usually drying grayish or brown; secondary veins slightly raised adaxially; – widely distributed in the cerrado biome of Brazil, as well as in eastern Bolivia and in eastern Paraguay ... *D. lasiocalyx*

3* Young twigs glabrous or only scattered hairy distally; leaves glabrous on both sides when mature (younger leaves sometimes with scattered hairs along the veins abaxially), drying dark gray, dark brown or ± black; secondary veins usually markedly raised adaxially; – eastern Brazil ..... *D. coccolobifolia*

***Diospyros coccolobifolia* ["*coccolobaefolia*"] Mart. ex Miq.**, Fl. Bras. (Martius) 7 (17): 6, tab. 1, fig. 1 (1856); – [fig. 1–4].

Protologue: "crescit (planta Hamadryas) in campestribus siccis ad fluvium S. Francisci in prov. Minarum, e. g. prope Salgado et in deserto versus Vâo do Paranan. Floret Aug. Sept.: M." [M. = Martius].

Typus: Brasil, Provincia M. G. [Minas Gerais], ad [Porto de] Salgado [now: Januária] et [Fazenda] Capão [not located], planta Hamadryas, [ca. 15°30' S, 44°22' W], habitat in deserto edito pareo, (fl female), Aug. 1818, **C.F.P. von Martius s.n.** [holotype: M (see fig. 1, 2c)], "arbusto consito".

Note: An additional small label attached to the type specimen bears the hardly legible writing: "Certão do Paranan". The coordinates given above are those from Januária.

= *Diospyros araripensis* Cavalcante, Bol. Mus. Paraense Emilio Goeldi, N. S., Bot., 21: 2–3, estampa II (1963).

Typus: Brasil, Ceará, Serra do Araripe [near Crato], [ca. 7°15' S, 39°30' W], (fl male), 21 Sep. 1957, **T.N. Guedes 620** [holotype: MG n.s., isotypes: IAN n.s., UB (photo W neg. 2100)], "árvore 3 m".

Note: According to Ducke (1959: 246, 248), the type was collected near the city of Crato.

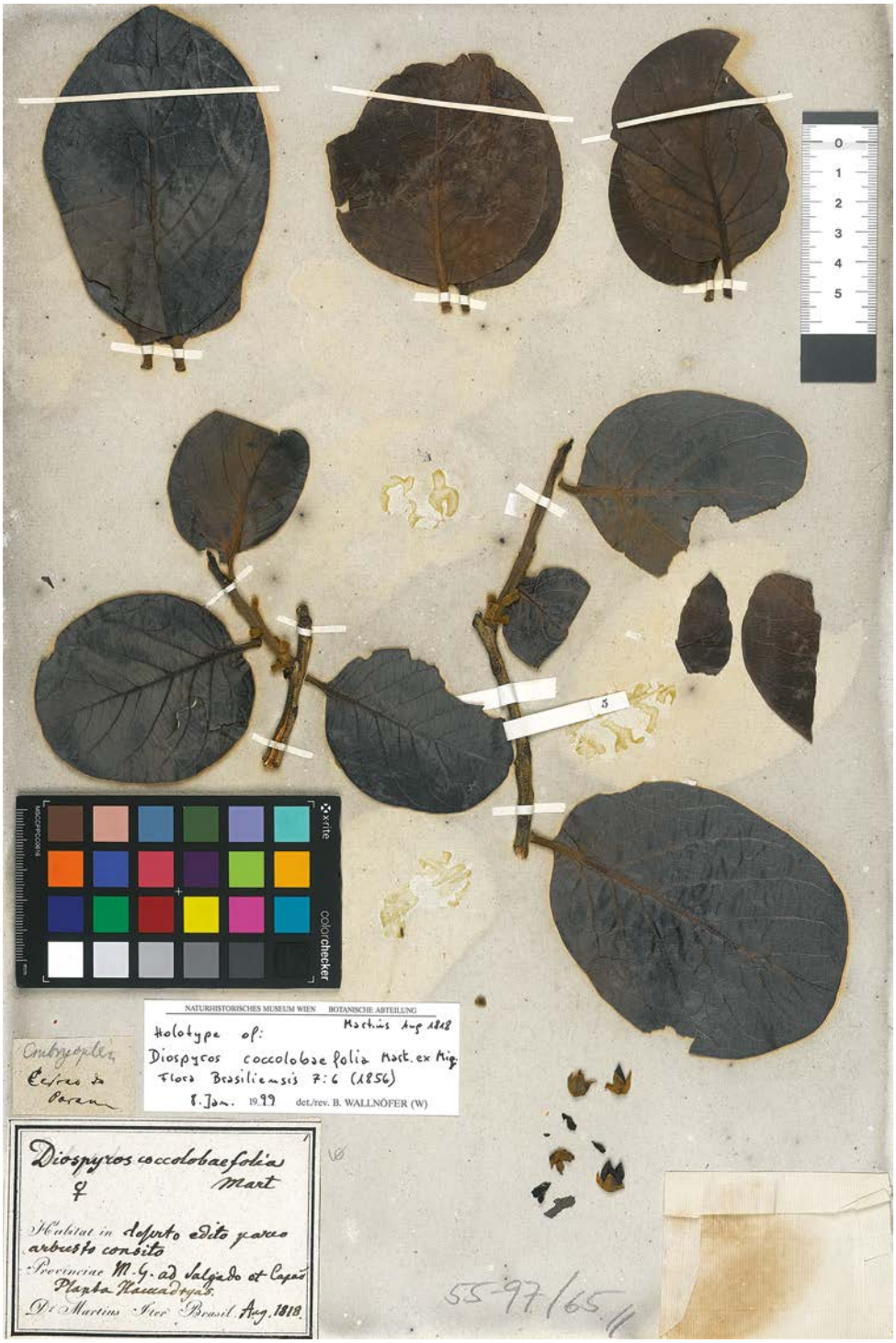


Fig. 1: Holotype of *Diospyros coccolobifolia* MART. ex MIQ. [M].

Treelet or tree up to 7 (–15) m tall (15 m according to Lützelburg 26059, 26201 from the Serra do Araripe in Ceará), with a diameter up to 30 cm (Pinto 265), already flowering when ca. 1 m tall, apparently deciduous; bark gray, corky, and with deep cracks (Araújo 170, Jesus et al. 830, Mendonça et al. 3275); bark of older twigs sometimes slightly corky (e.g., Harley et al. 21353); buds rarely present on herbarium specimens (e.g., Harley et al. 21353, Carvalho et al. 1789) inconspicuous, their primordia and bud scales always densely hairy; young twigs medium densely to densely covered with brown, long, slightly flexuose, spreading hairs of different length proximally, scattered hairy at the middle and ± glabrous distally (the type), on other specimens completely glabrous (e.g., Gardner 1511) or scattered hairy all over their length; twigs of the former season completely glabrous gray to brownish when dry, often with exfoliating epidermis, covered with longitudinal lenticels resembling small cracks; – **leaves** (fig. 2a) alternate; petioles (6–) 10–16 mm long, 2 (–3) mm thick, glabrous or scattered hairy, sometimes ± winged distally; young leaves usually glabrous and drying black; leaf lamina elliptic, sometimes ± circular, less frequently lanceolate [= narrowly elliptic, e.g., Harley et al. 21130, Walter et al. 222], (3–) 6–12 (–18) cm long, (3–) 4–9 cm wide, (1–) 1.5–2 (–3) times as long as wide, widest ± at the middle, firmly chartaceous or coriaceous; adaxial leaf surface glabrous, dark glossy green when alive, dark gray to brown or blackish-brown and ± shiny when dry; abaxial leaf surface completely glabrous or with scattered, spreading hairs along the veins, pale and light green when alive (slightly glaucous according to Harley et al. 21199), drying dark gray, dark brown or ± black (sometimes "chestnut-brown" on one of the two sides); leaf apex broadly rounded or obtuse, rarely acute or emarginate; base of the lamina rounded or cuneate, less frequently truncate or slightly cordate; leaf margins entire, ± flat or slightly revolute especially at the base; flachnectaria on abaxial leaf surfaces small, hairless, up to 10 (–23), some mm apart from the midvein or sometimes touching it, usually missing near base and apex of leaves, completely missing on some leaves; veins pale yellowish on living leaves (Harley et al. 21353, Harley et al. 21130); midvein flat, slightly raised or sunken and glabrous adaxially, markedly prominent and with scattered hairs abaxially; secondary veins 7–10 per side (proximal veins on some leaves very close together), ± straight proximally and curved distally, decurrent for a short distance along the midvein, usually markedly raised adaxially, prominent, glabrous or scattered hairy abaxially; higher order veins flat or slightly sunken adaxially, ± flat or slightly raised abaxially; – **inflorescences**: cymes placed in the axil of caducous bracts or sometimes of small leaves at the base of new long shoots; male cymes 1–3-flowered; stalks (peduncles and pedicels) 4–13 mm long and 1 mm wide, always ± densely hairy; pedicels of the lateral flowers up to 3.5 mm long, 1 mm thick; female cymes 1-flowered; stalks (peduncles and pedicels) 3–6 mm long and ca. 2.5 mm thick, always densely covered with brown hairs; bracteoles 2–3 mm long, ca. 1.5 mm wide, ± triangular, acute, densely hairy abaxially, glabrous adaxially, soon caducous; – **flowers** 4–5-merous; flower buds green, covered with ferruginous hairs when alive; male flowers (Gardner 1511: fig. 2b) 13–15 mm long at anthesis (when petals erect and with pedicels excluded); calyx 6–8 mm long and 10 mm wide, undivided in the proximal 1.5–2 mm, green when alive; calyx lobes 4–6.5 mm long, 2–3 mm wide, triangular, ± acute, flat, on adaxial side medium densely to densely covered with ± uniform hairs, on abaxial side scattered to medium densely covered with slightly spreading, ± straight long hairs intermixed with much shorter ones, ± glabrous near the margins on both sides, but with patent hairs on the margins; corolla 11–13 mm long at anthesis (when lobes erect), glabrous adaxially,

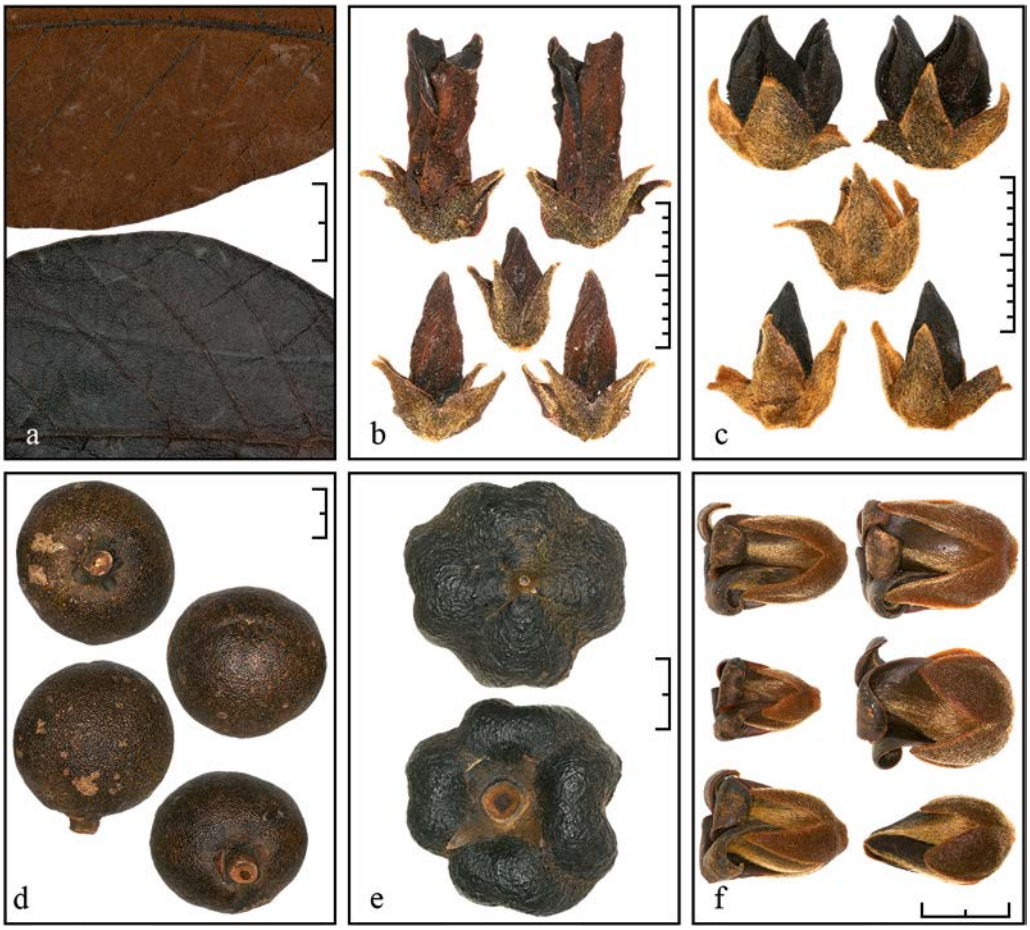


Fig. 2: *Diospyros coccolobifolia*: a: abaxial (on top) and adaxial (on bottom) leaf surface; – b: three male flowers as seen from both sides (a–b from Gardner 1511 [W]); – c: three female flowers as seen from both sides (from Martius s.n., holotype [M]); – d: fruits (from Anderson et al. 36468 [NY]); – e: seedless fruits (from Walter et al. 222 [on top: CEN, on bottom: US]). – *D. lasiocalyx*: f: male flowers on left side, female ones on right side (from Furtado IFRV 473 [W], flowers in alcohol); – scale = 1 cm.

nearly glabrous abaxially, green when alive; tube 2–3 mm long; corolla lobes 9–11 mm long and 3–5 mm wide, widest at the middle or in the distal half, obtuse or rounded, with few patent small hairs at the base; stamens 20–25 per flower [20: Silva et al. 177; 25: Gardner 1511; CAVALCANTE (1963) indicated only 13 stamens for his *D. araripensis*], 4.5–7 mm long; filaments 1.5–2.5 mm long and ca. 0.2 mm wide, ± densely covered with straight, long hairs, fused together in the proximal 0.5 mm and adnate to the corolla tube near its base; anthers linear, 2–5 mm long and ca. 0.3 mm wide; connectives glabrous, their apices short, obtuse and slightly enlarged or ± acute; rudiment of the ovary subglobose, ca. 1.5 mm in diameter, densely hairy, lacking stylodia; – **female flowers** (only three flowers of the type available, thus no flower dissected; see fig. 2c) 10 mm

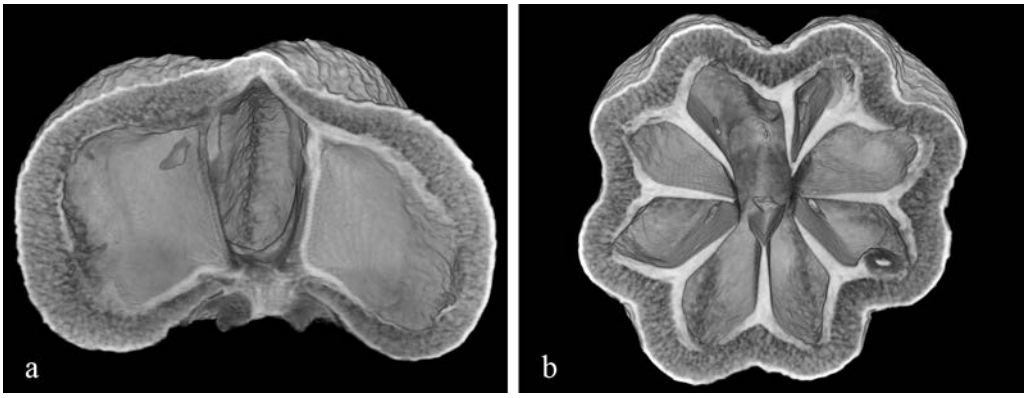


Fig. 3: *Diospyros coccolobifolia*: three-dimensional reconstruction (via X-ray tomography) of an 8-locular, seedless fruit (from Walter et al. 222 [US], same fruit as the one shown on bottom in fig. 2e), a: longitudinal section, b: transversal section showing the distal half; note the aborted, solitary ovules at the apex of the locules (visible in the locule on the left side in fig. a and in four locules in fig. b); diameter of the fruit: 3.5 cm; – (reconstructions: Yannick M. Städler).

long at anthesis (when lobes erect and with pedicels excluded); calyx 7 mm long and ca. 10 mm wide, undivided in the proximal 2 mm, abaxially medium densely covered with ± spreading, ± flexuose hairs of different length, adaxially densely covered with slightly longer hairs; calyx lobes 4–5 mm long, 3.5–5 mm wide, triangular, with flat margins; area around the sinuses between the calyx lobes inconspicuous; corolla 8–9 mm long (when lobes erect) and ca. 8 mm wide at anthesis, glabrous adaxially (inside), nearly glabrous abaxially (with a few hairs on proximal parts); corolla lobes ca. 7 mm long, ca. 4 mm wide, widest below the middle, ± acute; staminodia 4 (according to MIQUEL 1856: tab. 1, fig. I), episepalous, linear, hairy proximally, otherwise glabrous, adnate to the corolla tube near its base; ovary usually 4-carpellate and 8-locular, ca. 7 mm long (including stylodia), gradually narrowed into the stylodia, densely covered with ferruginous-brown, spreading hairs; stylodia 4, 1.5 mm long, fused together in the lower half; stigmata ca. 1 mm long, linear; – stalk of the **fruits** 2–8 (–10) mm long, at the middle 2.5–4 mm thick, distally 5–8 mm wide, ± densely hairy; fruits (fig. 2d–e, 3) usually up to 8-seeded, oblate to globose, sometimes longer than wide (e.g., Lützelburg 26201), up to 3.7 cm in diameter, sometimes with a ± acute apex or when seedless then with broad longitudinal furrows corresponding to the margins of the carpels (e.g., Walter et al. 222, fig. 2e, compare also fig. 9i), medium densely to densely covered with spreading or patent hairs of different length when young, glabrescent except at the base and the apex when older, rugose or verrucose, with tightly adhering epidermis when dry, detaching with the calyx; living fruits green with pale green dots or brown patches when young, covered with ferruginous hairs, later greenish-brown or brown (mature?), or blackish (old?); fruit wall ca. 3 mm thick, very hard when immature, consisting of stone cells; calyx on fruits up to 2 cm in diameter and ca. 0.5 cm in height, undivided in the proximal 2–3 mm, green when alive, medium densely hairy and partially glabrescent abaxially; lobes triangular, 7–9 mm long, 6–7.5 mm wide, acute to obtuse, with flat margins, appressed to the fruit (except the apices); area around the sinuses between the calyx lobes inconspicuous; seeds not available.

Note: The species is only imperfectly known. Some collections were available for study only via digital photos. Unfortunately, the resolutions of the latter were sometimes too low to allow an examination of the indumentum, thus slight doubts concerning the identity of some specimens remained. – Still immature leaves display often ± scattered hairs along the veins on abaxial leaf surface but become glabrous when mature. On some specimens, however, the indumentum is somewhat denser and persists. These collections which are listed separately seem to be intermediates between *D. coccolobifolia* and *D. lasiocalyx*, and may represent hybrids. This needs, however, further investigation.

Reports in literature are mostly based on misidentifications and apply to the widespread *D. lasiocalyx* (e.g., OLIVEIRA-FILHO & MARTINS 1991, OLIVEIRA-FILHO 1992, DALPONTE 1997, DALPONTE & LIMA 1999, etc.). – The anatomy of the leaves of our species was studied by FIGUEIREDO et al. (1971).

Figures: twig with female flowers, a dissected female flower (MIQUEL 1856: tab. 1, fig. I); twig, leaf scar, male flower, stamen (CAVALCANTE 1963: estampa II); leaf venation (FIGUEIREDO et al. 1971: fig. 15, 19, 23).

Distribution, habitat and phenology: The species is only known from Brazil (Piauí, southern Ceará, western and southern Bahia, and northern Minas Gerais; fig. 4). It was collected in cerrado or cerradão vegetation on sandy, or clayey soil, or on yellowish-orange latosol. In Bahia it was reported from "campos gerais: shrub and herb-rich grassland with acaulous palms, but few trees" (Harley et al. 21130), in Ceará from the "agreste" vegetation (Guedes 400, Lützelburg 26059, 26201, DUCKE 1959), and in Minas Gerais from the caatinga (Jost et al. 471). The last report seems, however, to be doubtful. Not one elevation was indicated on the herbarium labels. The cerrado which was studied by COSTA et al. (2004) is located at an elevation of 900 meters. – The species was found in flower in April and from August to October and in fruit from October to April. COSTA et al. (2004) reported the species to flower in November and to be in fruit from January to March.

Vernacular names and use: In Ceará it is called "marmelada" (several collectors, DUCKE 1959, CAVALCANTE 1963), and "jatubá [jatobá?] do veado" (Lützelburg 26059). In Piauí and in Ceará it is also named "olho de boi" (Costa s.n. EAC 32732, Castro CGPI.59.471, COSTA et al. 2004). – The fruits are said to be edible (Allemão & Cysneiros 963, Carneiro 9).

Specimens examined: **Brasil**, Piauí, Amarante, entre Floriano e Amarante, [ca. 6°32' S, 42°53' W], cerrado, (fr), 25 Feb. 1980, **A. Fernandes & P. Martins s.n. (EAC 8046)** [EAC n.s. (dig. photo)], "arbusto"; – Mun. Oeiras, Faz. Piloto, Chapada Grande (Missão Alemã/DNOCS), PI-230, km 67/68, 400 m [according to CASTRO et al. 1998: 6°36' S, 42°16' W], cerrado, (st), May 1987, **A.J. Castro CGPI.59.471** [UEC], "arvoreta"; – same locality: (yfr), Nov. 1986, **A.J. Castro CGPI.2.FP** [UEC]; – Bertolínia, a 5 km de Bertolina, lado Norte, [7°35' S, 43°57' W], cerrado, (fr), 4 Dec. 1980, **A. Fernandes et al. s.n. (EAC 9422)** [EAC n.s. (dig. photo)], "arvoreta".

Ceará, Araripe, Estr. Belo Horizonte, ladeira, [ca. 7°5' S, 40°5' W], agreste, (st), 16 May 1934, **P. von Lützelburg 26059** [M], "arv. 15 m; fl. brancas"; – Serra do Araripe [near Crato], [ca. 7°15' S, 39°30' W], agreste, (fl male), 27 Sep. 1957, **T.N. Guedes s.n.** [K], "árvore 5 m; flor verde claro com perfume"; – same area and collector: (fr), 14 Feb. 1958, **400** [K (+ carp.)], "árvore pequena"; – same data: **507** [IAN n.s., K (+ carp.), MG n.s.], "árvore 7 m"; – same Serra: (fl male), Oct. 1838, **G. Gardner 1511** [BM 2×, FI-W n.s. (dig. photo), G, GH, K 2×, NY, OXF, P 4×, US, W 2×], "flowers green"; – Chapada do Araripe, Serra dos Prazeres, [ca. 7°15' S, 39°30' W], (fr), 7 Apr. 1993, **F. Carneiro 9** [EAC n.s. (dig. photo)]; – Floresta Nacional do Araripe, Malhada Bonita, [ca. 7°15' S, 39°30' W], mata, (fr), 28 Feb. 1978, **A. Fernandes s.n. (EAC 4244)** [EAC n.s. (dig. photo)], "arbusto"; – Serra do Araripe, Tabuleiros dos Cayriris [= Cariri] ("do

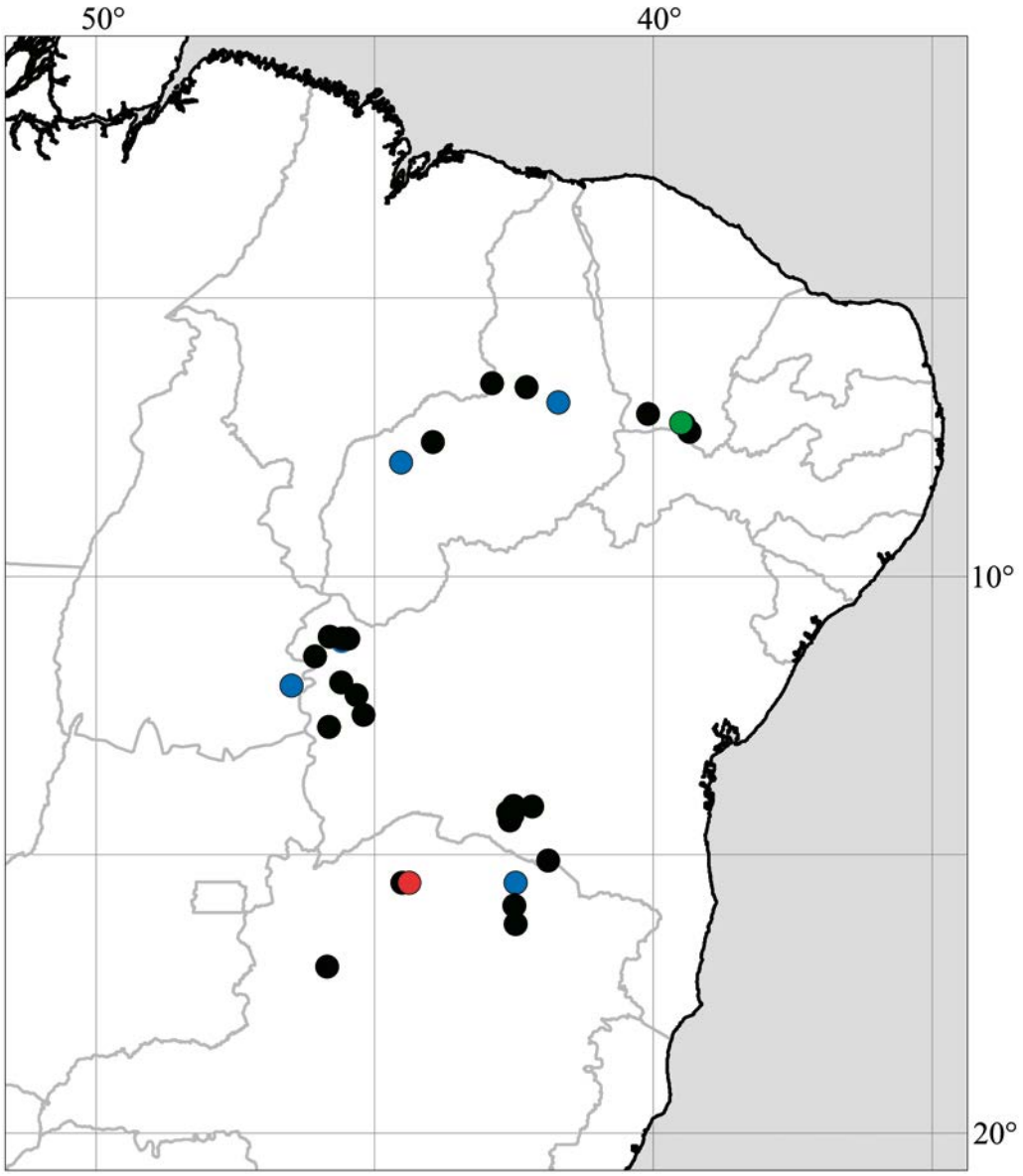


Fig. 4: Distribution of *Diospyros coccolobifolia* (●; type locality: ●; type locality of *D. araripensis*: ●); intermediate populations between *D. coccolobifolia* and *D. lasiocalyx* (●).

Araripe e dos tabuleiros dos Ayriris"), [ca. 7°16' S, 39°27' W], (fr), s.d., **F. Allemão & M. Cysneiros 963** [paratypes (of *D. araripensis*): MG n.s., R; a specimen in Herb. Glaziou in P belongs probably also here], "arbúsculo"; – Crato, Floresta Nacional do Araripe (FLONA), 900 m, 7°24'28" S, 39°20'55" W, cerrado, (fl male), 10 Oct. 2000, **I.R. Costa s.n. (EAC 32382)** [EAC n.s. (dig. photo)], "árvore"; – same data: **(EAC 32731)** [EAC n.s. (dig. photo)]; – (fr), **(EAC 32722)** [EAC n.s. (dig. photo)]; – (fr), 2 Mar. 2000, **s.n. (EAC 32723)** [EAC n.s. (dig. photo)], "árvore; fruto marrom"; – same data: (fr), 10 Jan. 2001, **s.n. (EAC 32383)** [EAC n.s. (dig. photo)]; (defl male, yfr), **(EAC 32732)** [EAC n.s. (dig. photo)]; – (fr), 20 Feb. 2001, **s.n.**

(EAC 32715) [EAC n.s. (dig. photo)]; – same area: 10 km do Crato, 5 km da interseção Moreilândia-B, [ca. 7°24' S, 39°21' W], cerrado arbóreo; solo arenoso marrom; topo de chapada, (st), 17 Jul. 1994, **F.S. Pinto 265** [EAC n.s. (dig. photo)], "árvore, 30 cm"; – Barbalha, Chapada do Araripe, Vereda da Baixa do Cão, [not located; ca. 7°24' S, 39°21' W], (fr), 30 Mar. 2000, **E.B. Souza et al. 483** [EAC n.s. (dig. photo)], "arbusto ereto, 1,5 m"; – Serra do Araripe, [logar] Baixa casa [not located], agreste, (fr), 17 Jan. 1935, **P. von Lützelburg 26201** [M], "arv. 15 m; flor verdead.".

Bahia, Formosa do Rio Preto, Quilombo Furtuoso, 11°4'55" S, 45°48'0" W, cerrado s.s., (fr), s.d., **K. Yoshida-Arns et al. BHRG-319** [HUEFS n.s. (dig. photo)], "arvoreta; frutos verdes"; – Fazenda Estrondo, ca. 14 km da ponte do Córrego Riachão e direção à Sede da Fazenda, 525 m, 11°6'31" S, 45°33'38" W, cerrado; relevo plano com solo arenoso, (yfr), 11 Nov. 1997, **R.C. Mendonça et al. 3275** [IBGE n.s., RB n.s. (dig. photo)], "arvoreta ca. 3 m, 6 cm DAP, heliófita; tronco com casca fissurada, gretada; folhas cartáceas, discolor verde; frutos imaturos de cor verde com pelos ferrugíneos"; – Fazenda Lagoa de Fora, cerrado próximo ao Rio Riachão, 11°7'17" S, 45°28'0" W, cerrado, (fl male), 12 Oct. 1989, **P.E.N. Silva et al. 56** [FHO, RB n.s. (dig. photo)], "árvore 2,5 m, rara; botões florais com cálice ferrugíneos e pétalas verdes; – próximo ao rio Riachão, próximo a vereda "Olhos D'Agua", 530 m, 11°7'17" S, 45°28' W, cerrado; solo arenoso, (fr), 7 Apr. 1989, **B.M.T. Walter et al. 222** [CEN, MG n.s., US], "árvore 2 m; frutos imaturos"; – Projeto Ouro-Verde, rodovia Anel da Soja, reservas de cerrado entre plantios de soja, 710 m, 11°26' S, 46°4' W, cerrado sensu stricto; solo areno-argiloso (latossolo); relevo plano no local e região, (fr), 14 Nov. 1995, **B.M.T. Walter et al. 2931** [CEN n.s. (dig. photo)], "arvoreta 1,5 m, frequente a ocasional no local; frutos imaturos marrom-esverdeados; cálice verde"; – Barreiras, Cachoeira Acaba-Vida, ca. de 91 km da sede, 710 m, 11°53'41" S, 45°36'3" W, vegetação arbustiva-arbórea; solo areno-argiloso, (fr), 4 Feb. 2000, **N.G. Jesus et al. 830** [ALCB n.s., HUEFS n.s. (dig. photo)], "arbusto 2,4 m; caule suberoso; folhas cartáceas, discolores; frutos imaturos verdes"; – Espigão Mestre, Serra 34 km W of Barreiras, ca. 710 m, [12°8' S, 45°19' W], cerrado or cerradão, the soil clay or sandy, (fr), 2 Mar. 1972, **W.R. Anderson et al. 36468** [COL n.s. (dig. photo), F, K, MG n.s., MICH, MO, NY (+ carp.), RB n.s. (dig. photo), UB, US], "tree 4 m tall; fruit green"; – Mun. de São Desidério, entre as cidades de Sítio Grande e Estiva, 510 m, 12°28'50" S, 45°12'16" W, cerrado; solo arenoso, (defl male), 14 Oct. 1989, **R.C. Mendonça et al. 1514** [MG], "árvore 3 m, frequente; folhas cartáceas; botões florais de cor verde ferrugínea"; – estrada de chão entre Roda Velha e Estiva, ca. 725 m, 12°42'20" S, 45°48'50" W, cerrado; solo com ?ra arenosa; relevo plano, (yfr), 7 Nov. 1997, **R.C. Mendonça et al. 3230** [IBGE n.s., RB n.s. (dig. photo)], "arvoreta ca. 1,8 m, heliófilo; folhas cartáceas, discolor verde; cálice verde; frutos imaturos cor verde"; – Serra Geral de Caetité, ca. 5 km S from Caetité along the Brejinhos das Ametistas road, ca. 1000 m, 14°7' S, 42°29' W, campos gerais: shrub and herb-rich grassland with acaulous palms, but few trees, (fr), 9 Apr. 1980, **R.M. Harley et al. 21130** [FHO, K, NY n.s. (dig. photo), W], "shrub to 1 m; leaves coriaceous, dark green above, paler beneath with pale yellowish veins"; – ca. 14 km SW of Caetité, by the road to Morrinhos, and about 15 km W along the road from the junction with the Caetité/Brejinhos das Ametistas road, ca. 950 m, 14°14' S, 42°36' W, cerrado, (fr), 13 Apr. 1980, **R.M. Harley et al. 21353** [FHO, K, HUEFS n.s. (dig. photo), U, W], "small tree to 3 m; leaves coriaceous, bright green with pale yellowish-green midrib & primary veins above, pale green beneath; fruit spherical, hard, blackish"; – ca. 12 km SW of Caetité, by the road to Morrinhos, and ca. 9 km W along this road from the junction with the Caetité/Brejinhos das Ametistas road, ca. 950 m, 14°14' S, 42°35' W, cerrado, (fr), 10 Apr. 1980, **R.M. Harley et al. 21199** [CEPEC n.s. (dig. photo), FHO, K, W], "small shrub ca. 1 m; leaves very coriaceous dark glossy green above, pale, slightly glaucous beneath; fruit green with pale green dots, spherical"; – local chamado Brejinho das Ametistas, 2 km SW da sede do povoado, 900 m, [ca. 14°16' S, 42°32' W], (fr), 15 Apr. 1983, **A.M. de Carvalho et al. 1789** [B, CEPEC n.s. (dig. photo), MG n.s.], "arbusto ca. 1 m; frutos imaturos verdes"; – Região de Brejinho das Ametistas, área da Bahia Mineração, 985 m, 14°22'59" S, 42°33'47" W, campos gerais, (fl male), Apr. 2008, **M.S. Mendes et al. 365** [BHCB n.s. (dig. photo), RON n.s. (dig. photo)], "arbóreo"; – Caetité, 12–20 km da cidade em direção a Brejinho das Ametistas, 1100–1200 m, entre 14°6'10" S, 42°30'31" W e 14°11'19" S, 42°29'48" W, (fr), 8 Mar. 1994, **V.C. Souza et al. 5363** [K, SP n.s., SPF n.s. (dig. photo)], "arbusto ca. 1,2 m; frutos verdes com manchas castanhas"; – próx. Rio Muquem, 1010 m, 15°6'23" S, 41°52'33" W, savana; latossolo vermelho amarelo, (defl male), 15 Nov. 1979, **A.P. de Araújo 170** [RB n.s. (dig. photo)], "arbusto 1,5 m, frequência densa; casca cinza suberosa; folhas verdes; botão verde".

Minas Gerais, Mun. de Januária, Fazenda Raizama, [ca. 15°30' S, 44°30' W], cerrado; solo arenoso, (fl male), 28 Aug. 1990, **P.E.N. Silva et al. 177** [FHO, MG], "árvore 3,5 m; flores verdes; botão floral verde; folhagem nova"; – Mun. Rio Pardo de Minas, assentamento Verda Funda, 904 m, 15°54'49" S, 42°28'50" W,

cerrado ralo; tabuleiro; solo argiloso, (fr), 10 Dec. 2008, **A.C. Sevilha et al. 4937** [CEN n.s., W], "arbusto 1,5 m, comum; frutos imaturos verdes"; – Salinas, 15 km depois do entroncamento do aeroporto, estrada Salinas/Montes Claros, 886 m, 16°15'4" S, 42°27'55" W, caatinga, (fr), 7 Apr. 2002, **T. Jost et al. 471** [HRB n.s., HUEFS n.s. (dig. photo)], "arvoreta ca. 2 m; folhas discolores, glabras, cartáceas; face abaxial verde-claro; face adaxial verde-prateado; frutos imaturos verdes"; – Brasilândia de Minas, Faz. Brejão, [ca. 17°1' S, 45°51' W], cerrado, (fl male), 30 Sep. 1999, **A.A. Azevedo s.n. (BHCB 49387)** [BHCB n.s. (dig. photo)], "arbustivo".

Intermediate populations with *D. lasiocalyx* (with denser indumentum on twigs and abaxial leaf surfaces): Piauí, Mun. Teresina, 36 km NW of Picos on BR-316 to Teresina, 6°53' S, 41°48' W, [correct seems to be: 6°53' S, 41°42' W], hill with caatinga vegetation and sandstone outcrops, (fr), 24 Jan. 1993, **W. Thomas et al. 9608b** [HUEFS n.s. (dig. photo), NY n.s., SPF n.s. (dig. photo), W], "tree 4 m; fruit green; calyx brown"; – Uruçui, [ca. 7°57' S, 44°31' W], cerradão, (defl male), 4 Nov. 1985, **A. Fernandes & Matos s.n. (EAC 13933)** [EAC n.s. (dig. photo)], "arvoreta". – Tocantins, km 61 da estrada Dianópolis/Taguatinga, [ca. 11°58' S, 46°29' W], cerrado, (fr), 5 Dec. 1991, **R.D. Lopes et al. 31** [FHO, MG n.s.], "arbusto ca. 2 m; frutos escuros avermelhados". – Bahia, Município de Formosa do Rio Preto, Fazenda Lagoa de Fora, próximo ao rio Riachão, 11°9'48" S, 45°35'19" W, cerrado, (yfr), 12 Oct. 1989, **B.J. Dias et al. 89** [CEN n.s. (dig. photo), MG n.s., US], "árvore ca. 6 m, ocasional; folhas cartáceas; frutos imaturos de cor verde". – Minas Gerais, Rio Pardo de Minas, Areião, 960 m, 15°29'39" S, 42°28'9" W, cerrado; relevo suave ondulado; neossolo quartzorénico; alto de chapada, (defl male), 3 Nov. 2006, **A.C. Sevilha et al. 4617** [CEN n.s. (dig. photo), W], "árvore 3 m, ocasional; botão floral".

***Diospyros hassleri* Hiern in Chodat & Hassl.**, Bull. Herb. Boissier, sér. 2, 7 (8): 677–678 (1907); – [fig. 5–7].

Typus: Paraguay, Canendiyu, in altoplanitie et decliviis Sierra de Maracayú, Ipé hú [according to L. Ramella (G): Ypé Jhu = black goose, 23°54' S, 55°27' W], in campo, (fl male, fl female), Oct. 1898–1899, **E. Hassler 4964** [lectotype (here designated): G (G00381689, fl. male), isotypes: BM, G 3×, GH, K, MPU n.s. (dig. photo), NY, P 3×, UC, W; – (G00381691: photo F 26766 at F, GH, MICH, MO, US)], "suffrutex 0,3–0,5 m; petalas virides"; – photos accessible via the homepage of G.

Note: The isotypes in G (2×), GH, K, MPU, NY, P, UC, and W bear male flowers; the ones in BM and G (1×) are mixed displaying male and female shoots. – In the protologue (Hiern in Chodat & Hassler 1907) another specimen is also discussed but its data are not given. As can be seen in the herbarium of Geneva, it is Hassler 4605 which bears Hiern's annotation: "cf. *Diospyros hassleri* Hiern ms. – (W.P.H., 30 April 1907)".

Suffrutescent, perennial plant (according to Soria 7485 and Zardini & Velázquez 25890: a "herb") 15–50 cm tall, already flowering when ca. 15 cm tall; xylopodium (woody rootstock) 1–2.5 cm thick (see fig. 5, 6a–b); shoots annual (dying off each season till the soil level), ascending to erect, unbranched, light green when alive, medium densely to densely covered with straight or slightly flexuose, patent, ca. 0.1 mm long hairs and with much longer, more spaced, ± straight, ± patent, up to 2.5 mm long hairs (Hatschbach & Silva 52615 only with the long hairs); shoot apices densely covered with spreading, light brown hairs (fig. 6c); – **leaves** (fig. 5–6) alternate, gradually decreasing in size and length from the apex to the base of the shoots (the proximal ones resembling cataphylls); petioles 2.5 mm long, 1 mm thick, densely hairy; lamina of the upper leaves lanceolate [= narrowly elliptic] to obovate-lanceolate, (1–) 3–13 (–16) cm long, (1–) 1.5–5.5 cm wide, 1.2–4.5 times as long as wide, widest at or above the middle, chartaceous, slightly shiny adaxially and dull abaxially when dry, on both sides with well-spaced, 0.5–2 mm

Fig. 5: *Diospyros hassleri* HIERN (Hatschbach & Silva 52615 [US]).

long, slightly flexuose, ± patent hairs (shorter hairs only present towards the margins and the apex as well as on the basal smaller leaves); old leaves ± glabrescent (Balansa 2288 in P); leaf apex acute, obtuse or rounded; base of the lamina cuneate; leaf margins entire, with long, patent hairs; flachnectaria not clearly identified, apparently missing; midvein ± flat adaxially, prominent abaxially, medium densely hairy; secondary veins 9 per side, flat or slightly raised adaxially, prominent abaxially (proximal veins of the smaller leaves very close together); veins of higher order flat or slightly raised on both sides; – **inflorescences**: cymes placed in the axil of hairy cataphylls, more distally of small leaves and then of regular leaves; male cymes 1–3-flowered (fig. 6a, 6d), the female ones 1-flowered (fig. 6e); stalks (peduncles and pedicels) 10–15 mm long and ca. 1 mm wide, densely and patent hairy (indumentum like the one on young twigs); pedicels of the lateral flowers 2–4 mm long, 0.8 mm thick, distally (at the base of the flowers) with a dense ring of patent hairs; bracteoles ± lanceolate, up 7 mm long, 1.3–2.5 mm wide in both sexes, widest below or at the middle, acute, medium densely hairy abaxially, glabrous adaxially, caducous; – **flowers** 4 (–5)-merous, fragrant (Schinini & Caballero 29942); male flowers (fig. 6a, 6d) 13–18 mm long at anthesis (when petals erect and with pedicels excluded), ca. 12–20 mm wide; calyx 12–15 mm long and ca. 12 mm wide, undivided in the proximal 2.5–5 mm, on the outside medium densely covered with straight or slightly flexuose, spreading, long hairs intermixed with much smaller, often more flexuose ones, on the inside covered with shorter and sometimes more scattered hairs; calyx lobes 6–11 mm long, 2.5–4 mm wide, triangular, acute, flat; corolla green when alive (Schinini & Caballero 29942, 30021), 13–15 mm long at anthesis (when lobes erect), glabrous adaxially, on the outside only with patches of dense indumentum near the base of the petals (hairs ± appressed or slightly spreading and of different length), elsewhere glabrous; tube 1.5–2 mm long, ca. 2 mm wide; corolla lobes 11–16 mm long and 4–6 mm wide, obtuse or ± acute, widest above the middle; stamens 17 per flower (only one 14 mm long corolla with one small and four large petals of Hassler 4964 dissected), 5–6 mm long, glabrous; filaments 1.5–2 mm long and ca. 0.2 mm wide, fused together near their base or in their proximal half and forming bundles of up to 4 stamens, adnate to the corolla tube ca. 0.5 mm above its base; anthers linear, 3–4 mm long and ca. 0.3–0.5 mm wide; connectives obtuse; rudiment of the ovary densely hairy, lacking stylodia; – **female flowers** (fig. 6e) 17 mm long at anthesis (when lobes erect and with pedicels excluded), covered with the same indumentum as the one on the male flowers; calyx 12–13 mm long and ca. 10 mm wide, undivided in the proximal 3–4 mm; calyx lobes 11 mm long, 5–6 mm wide, triangular, acute, flat; area around the sinuses between the calyx lobes inconspicuous; corolla ca. 15 mm long at anthesis (when lobes erect), glabrous adaxially, on the outside only with patches of indumentum near the base of the petals (as on male flowers), yellowish-green when alive (Hassler 4605); tube 1.5–2 mm long in bud; corolla lobes ca. 13 mm long, 6–7 mm wide, widest in the distal half, acute or obtuse; staminodia 5 (only one 13 mm long, 4-merous bud of Hassler 4964 dissected), ± episepalous, 3–5 mm long, ca. 0.2 mm wide, linear, slightly widened ± at the middle, flat, ± acute, glabrous, free, adnate to the corolla tube ca. 0.5 mm above its base; ovary obviously 8-locular, ca. 6 mm long (including stylodia), ca. 4 mm in diameter (including the dense indumentum-layer), ± abruptly narrowed into the stylodia, very densely covered with light brown, ± spreading, ± straight, long hairs; stylodia 4, ca. 2 mm long, densely hairy except distally; – stalk of the **fruits** 4–7 mm long, 2–3 mm thick, densely hairy; fruits (fig. 5, 6a, 6f) ± globose, green when unripe, up to ca. 4 cm in

Fig. 6: *Diospyros hassleri*: a: shoots with male flowers, and a fruit (from Balansa 2288 [P]); – b: xylopodium (from Hatschbach & Silva 52615 [US]); – c: leaves and shoot apex; – d: male flowers (c–d from Hassler 4964, isotype [NY]); – e: female flowers (from Hassler 4964, isotype [BM]); – f: fruits (from Hatschbach & Silva 52615 [US]); – scale = 1 cm.

diameter when dry (Zardini & Guerrero 47957), densely covered with spreading hairs of different length (the longer ones 1.5–2 mm long, quite thick, ± straight, and well-spaced, the much shorter and thinner ones straight or slightly flexuose and densely crowded), ± glabrescent except at the base and apex when becoming mature, detaching with the calyx; fruit wall ca. 1 mm thick; calyx on fruits only slightly enlarging, up to ca. 2 cm in diameter and ca. 0.6 cm in height, undivided in the proximal 2 mm, densely hairy; lobes triangular, up to 8 mm long, 3–4 mm wide, acute, flat, appressed to the fruit (except the apices); seeds not available.

Habit: The species develops xylopodia (enlarged, woody subterranean rootstocks; see for this e.g., RIZZINI & HERINGER 1961, 1962). The shoots are annual, unbranched, and die each season to soil level. This seems to be an adaptation to a habitat frequently afflicted by fire and frost. A specimen collected by Balansa (no. 2288 in P, without date)

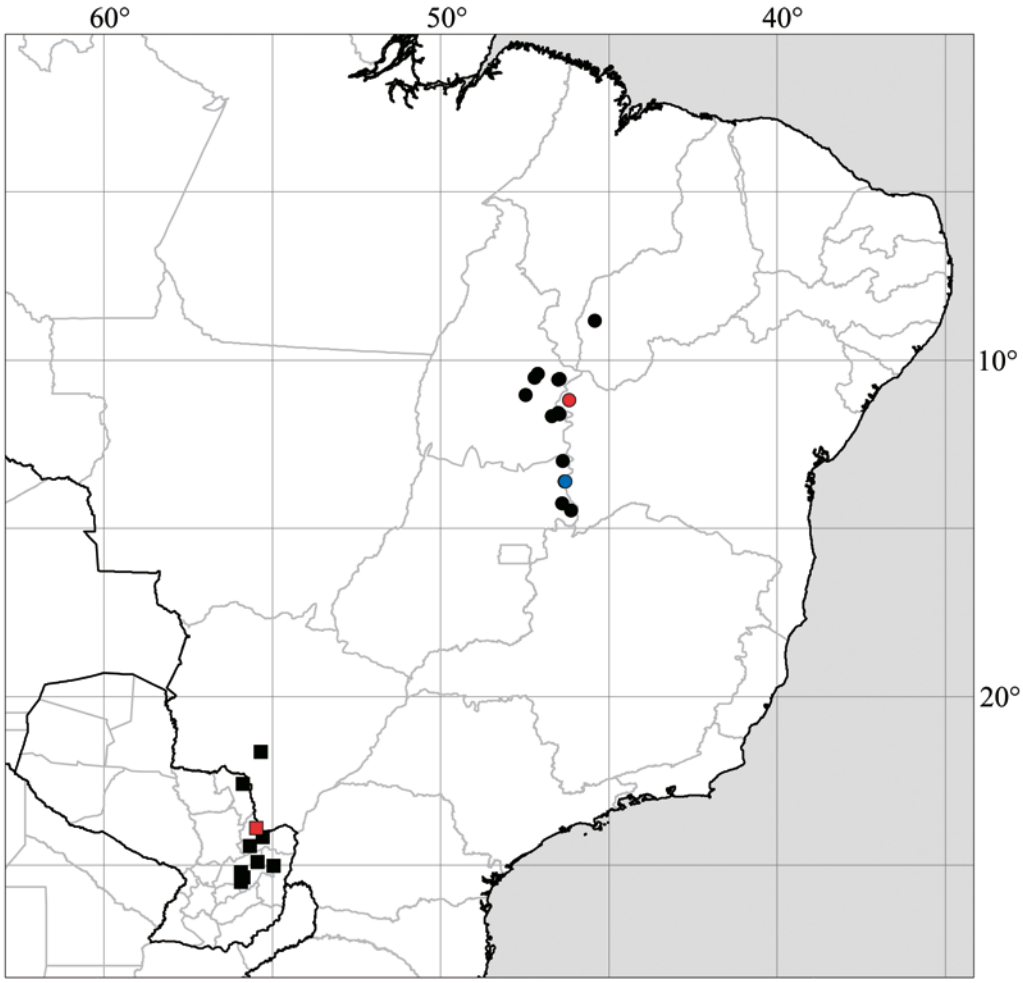


Fig. 7: Distribution of *Diospyros hassleri* (■; type locality: ■); – *D. ovalis* (●; type locality: ●); intermediate populations between *D. ovalis* and *D. lasiocalyx* (●).

displays old, ± glabrescent leaves and was seemingly collected at the end of the season. It presents a few, densely hairy, small buds (like those of *D. lasiocalyx*) distally. Further studies in the field concerning the phenology of this interesting species are needed.

Distribution, habitat and phenology: The species is only known from one collection in Brazil (Mato Grosso do Sul), and from a few collections in eastern Paraguay (Alto Paraná, Amambay, Caaguazú, and Canendiyu; fig. 7). It was collected in grass savannas without woody plants ("campo limpio" / "campo limpo") and in low cerrados on sandy and dry places at low elevations (Schinini & Caballero 30021: 275 m; according to "Google Earth Pro", the localities of Hatschbach & Silva 52615 and Zardini & Guerrero 47957 are situated at ca. 480 m and 200 m, respectively). – It was found in flower in September and October and in fruit from October to January.

MOLFINO (1923: 99) reported it from a nearby area in northern Argentina: "Misiones: Iguazú, leg. F. M. Rodríguez, sin número". Unfortunately, the corresponding specimen could not be located in BAF (Gustavo C. Giberti via email, 14.9.2005). This report remains thus doubtful (see also WALLNÖFER 2008b).

Specimens examined: **Brasil**, Mato Grosso do Sul, Rod. BR-267, 20 km O [oeste] de Maracaju, [21°38' S, 55°20' W], campo limpo, seco, (yfr), 25 Oct. 1988, **G. Hatschbach & J.M. Silva 52615** [MBM n.s. (dig. photo), US (see fig. 5, 6b, 6f)], "xilopodífera"; (cited as "*D. hispida*" in DUBS 1998).

Paraguay, Amambay, Estancia 5 Hermanos [= Rancho 5 hermanos], camino a Pirity [according to L. Ramella (G), and CABRERA et al. 2009: 22°36' S 55°52' W], en el cerrado, (fr), 9 Dec. 1995, **N. Soria 7485** [FCQ n.s., MO n.s. (dig. photo)], "hierba fructífera". – Canendiyu, Mbaracayú Natural Reserve, administered by Fundación Moises Bertoni, 24°11'16" S, 55°16'45" W, cerrado scrub, (fr), 15 Jan. 1998, **E.M. Zardini & L. Guerrero 47957** [AS n.s., MO], "shrub 40 cm; fruit green"; – in regione fluminis Curuguaty (iter ad "Yerbales" montium "Sierra de Maracayú"), [according to L. Ramella (G): 24°27' S, 55°39' W], campo, (fl female), Sep. 1898–1899, **E. Hassler 4605** [G 2×], "suffrutex 0,4–0,5 [m]; petala flavovirentia". – Caaguazú, Palomares, camino de Itaquyry [= Itakyry] a Curuguaty, ca. 275 m, 24°55' S, 55°25' W, en cerrado de *Butia paraguayensis*; suelo arenoso, (fl male), 10 Oct. 1995, **A. Schinini & G. Caballero 30021** [CTES n.s., GH n.s. (dig. photo)], "xilopodifera; ramas erectas, verde claras; flores verdosas"; – Arroyo Yuquyry/Arroyo Taruma, 4 km N of Arroyo Yuquyry, 25°13' S, 55°55' W, cerrado scrub, (fr), 12 Jan. 1991, **E. Zardini & R. Velázquez 25890** [MO], "herb 15 cm"; – Campo 9, [according to L. Ramella (G): 25°22' S, 55°50' W], cerrado arenoso, (fr), 20 Nov. 1982, **J.F. Casas & J. Molero FC 4353** [NY], "40 cm"; – Caaguazú, [ca. 25°30' S, 55°55' W], dans les Campos, (fl male, fr), 21 Mar. 1876 and s.d. (mixed collection), **B. Balansa 2288** [FHO, K, P 3×]. – Alto Paraná, Campo Limpio, camino a Itaquyry [= Itakyry], [ca. 25°2' S, 54°57' W], (fl male), 9 Oct. 1995, **A. Schinini & G. Caballero 29942** [CTES n.s., GH n.s. (dig. photo)], "xilopodifera; sufrutice con ramas ascendentes; pétalos verdes, perfumados".

***Diospyros lasiocalyx* (MART.) B.WALLN., comb.n.** – [fig. 2f, 8–15].

≡ *Annona lasiocalyx* MART., Fl. Bras. (Martius) 13 (1): 16 (1841).

Protologue: "crescit in silvis ad margines camporum prope Ypanema, prov. S. Pauli: Sellow, M. [= Martius]. Floret primis anni mensibus".

Typus: label without locality, date and collector [Brasil, São Paulo, Ypanema (= São João do Ipanema near Sorocaba)], [23°26' S, 47°36' W], (fr), [February–March 1829], [**F. Sellow**] **5628** [lectotype (here designated): B (see fig. 8, 9e)]; – Syntype: ad Ypanema, habitat in sylvis primaevis, (st female), Jan. [1818], **C.F.P. von Martius s.n.** [M n.s. (dig. photo; see also the old black and white photo F 6470 now available via the homepage of F, and also present in several herbaria)].

Note 1: Martius had no idea of what he was describing. In fact he placed the plant in the wrong family (Annonaceae) and noted in the protologue "genus recognoscendum" [= genus in need to be recognized]. The specimen in Munich collected by Martius is sterile and shows near its base only the peduncle of an old missing fruit. – Very unfortunately, Martius did not indicate which specimen of Sellow he had seen and in which herbarium it was kept. In Munich the corresponding specimen of Sellow is seemingly not present. There is apparently neither a specimen of Sellow in Martius' personal herbarium which was later incorporated into the herbarium of BR. At least R.E. Fries, the monographer of the Annonaceae who also visited Berlin, Brussels and Munich (FRIES 1931: 129, 313), did not report to have seen one. In Berlin there is a specimen which he attributed to Sellow and which bears only the following scanty information on the label: "*Anona* sp. nov. extricanda" and a line below in a different handwriting "*lasiocalyx* Mart." (fig.

Fig. 8: Lectotype of *Diospyros lasiocalyx* (MART.) B.WALLN. [B].

8). The name of the collector is not indicated but near the lower left corner a small tag with the number 5628 is attached. Persons working in B must have told Fries in 1931 that the specimen in question was collected by Sellow. Fries annotated the specimen correctly as "*Diospyros*" and published this discovery, but unfortunately he confounded the data and locations of the two syntypes (FRIES 1931: 313). – The specimen in Berlin consists of a twig with a still attached 4-parted calyx of a fruit (fig. 9e). One of the lobes was broken and is now missing together with the fruit body. Due to the large size of the fruits (they reach up to 6 cm in diameter), the fruit body was most likely removed by Sellow himself to enable him the preparation a quite flat herbarium specimen. It is unknown whether or not the separate fruit was also sent to Berlin. Very unfortunately, the handwritings "*lasiocalyx* Mart." on the two syntypes differ and are seemingly not from the same hand. Martius however, must have seen this Berlin specimen because he gives in the protologue a very detailed description of the calyx: "calycis (tri–quadri-partiti) laciniis ovatis acutis utrinque sericeo-tomentosis". Judging from the photo (the loan of the specimen was denied), the specimen of Martius in Munich had most likely no calyx anymore when it was collected (the calyx detaches with the ripe fruit)! The thick (!) peduncle is not the one of a flower (as indicated in the protologue: "floret") but instead one of a fruit. – For all these reasons, the specimen kept in Berlin is here selected as the lectotype! In addition Sellow is mentioned in the protologue in the first place.

Note 2: Sellow's itinerary in Brazil was reconstructed by URBAN (1893, 1906). For this purpose he also extensively used a catalogue of Sellow which was deposited in 1872 in the "Königliches Botanisches Museum zu Berlin" (now "Botanischer Garten und Botanisches Museum Berlin" housing the herbarium B), and now is missing. It was apparently destroyed during World War II (Pedro L.R. de Moraes via email; for details see MORAES 2008: 2; concerning the destruction of the Berlin Herbarium and its library during an insidious raid carried out by Allied aircrafts see PILGER 1953, HIEPKO 1987). Robert Vogt (curator in B) confirmed via email (6.9.2017) that this catalogue is now missing. – Sellow visited Ipanema ("Real Fabrica de Ferro São João do Ipanema" near Sorocaba) twice: in 1819/1820, and later again in 1829 (URBAN 1906: 108, 110; see also HERTER 1947 and HERTER & RAMBO 1953). According to URBAN (1893: 196), Sellow's plants numbered 5217–5662 (among which is also our lectotype!) were collected "im Staate S. Paulo vom Rio Pirituva bis Sorocaba (Jan.–März 1829)". URBAN (1906: 110) listed Ipanema between Itapetininga (9–16 February 1829) and São Paulo (25 March 1829). The specimen Sellow 5628 was, thus, collected in February or March 1829! – For those interested on Friedrich Sellow's life and his long exploration journey in Brazil: a biography was recently published by ZISCHLER et al. (2013).

= *Diospyros hispida* A.DC., Prodr. 8: 236 (1844).

Protologue: "in Brasiliae provinc. Minas-Geraes".

Typus: Brazil, without locality, (fr), 1840, **P. Claussen 478** [lectotype (here designated; see fig. 11): G-BOIS (photo F 8521 at F, GH, MICH, MO, NY, US), isotype: G-DEL n.s.], "calyx 4 aut per. monstr. 5 partitus".

Note: Unfortunately, the lectotype was quite recently remounted on a new sheet. As can be noted when comparing it with the corresponding old photo F 8521, the two twigs were broken and heavily damaged during this brutal action. All the fragments, including the two young fruits were placed in a large capsule. – According to the

protologue, CANDOLLE (1844) cited also a specimen in the herbarium G-DEL ("v. in h. Deless. et Boiss."), but this specimen could not be traced. Strangely, the above cited photo F 8521 was distributed with a label header stating "Types of the Delessert Herbarium". – A sheet in G-DC (G00142248) with only two leaves and without collection number could be part of the type collection: "Minas Geraes (Claussen), h. Deless. 1842". The look of all the other specimens of Claussen (cited further down among the specimens examined) is ± exactly the same as that of the lectotype: at least some of them could also be part of the type collection.

= *Diospyros burchellii* HIERN, J. Bot. 12: 240 (1874).

Protologue: "Goyaz, inter 'Campo-Aberto' et 'S. Basio', prope oppidum 'Bomfim', in pascuis collinis".

Typus: Brasil, Goiás, between Campo-Aberto and S. Basio (or Campo Alégre?), near Bomfim [near Silvânia], [ca. 16°42' S, 48°38' W], (fl male), 5 Oct. 1827, **W.J. Burchell 6107** [holotype: K (K000644387)], "arbuscula 15-ped.; flores virides".

Note: SMITH & SMITH (1967) were not able to provide coordinates for these localities ("Bomfim" is now written "Bonfim"; "Basio" could be the same as "Vasio"); (see also POULTON 1904). – A digital photo of the type can be seen via the homepage of K and via Reflora.

= *Diospyros hispida* A.DC. var. *camporum* WARM., Vidensk. Meddel. Naturhist. Foren. Kjøbenhavn 1874 (3–7): 66–67 (1874).

Protologue: "In campis ad Lagoa Santa hinc illinc, sed sparsim visa; item ad Piedade dos geraës et alibi" … "m. Aug. delapsus frondis vetustae incipit; m. Aug.–Nov. novella una cum floribus evolvitur".

Typus: Brasil, Minas Gerais, ad Lagoa Santa, [19°38' S, 43°53' W], "3.I.64: m. aflang håret frugt" [with oblong, hairy fruit] + "4.I.64: frutex i camp. ovenfor cabezeira da Lagoa" [shrub in the campo above the headwater of the lake], (st), 3+4 Jan. 1864, **E. Warming s.n.** [lectotype (here designated): C (see fig. 12)], "arbuscula vel frutex"; vernacular name: "fruta de jacú do campo". – Syntypes: without locality, (defl female), 4 Jan. 1864, **E. Warming s.n.** [C, could be an isolectotype], "Bladene ovenpå smukt [leaf blades above beautiful] / mørkegr., stærkt glinsende [dark green, very glossy] / Nedenunder brunl. grønne [below brownish green]"; – ad Lagoa Santa, (st), 3 Jan. 1864, **E. Warming s.n.** [US], "frutex"; – the following two specimens are mounted on one sheet: without data, (st, with old peduncles of fruits), 24 Nov. 1863, **E. Warming s.n.** [C]; – without locality, (st, with an expanding bud of a new twig), 26 Aug. 1864, **E. Warming s.n.** [C].

Note: Unfortunately, Warming's herbarium is very chaotic and made the selection of the lectotype rather difficult. In addition the specimen with the largest leaves was later provided with a new label and given to US. The capsule on the sheet bearing one of the syntypes in C contains a deflorate female flower and two pieces of paper replete with handwritten annotations on both sides. Some notes are in Latin and contain descriptions of the plant; some others are written in Danish in the so called German "Kurrentschrift" and thus barely legible. Four different dates appear on these notes, as well as the vernacular name "Baccupari bravo" (given also in the protologue) and without date the locality "Hab. mellem Piedade geraës og Guiá" [= between Piedade dos Gerais (at 20°28'14" S, 44°13'28" W) and Guiá (not located)].

= *Diospyros mattogrossensis* HOEHNE, Commiss. Linhas Telegr. Estrateg. Matto Grosso Amazonas, Annexo 5, Bot., 6: 66–67, est. 119 (photo), 130: fig. 2 (1915).

Protologue: "colhida nas matas das margens de pequenos córregos da cabeceira do Rio Cuyabá [= Cuiabá], próximos às contravertentes formadoras do Rio Paranatinga".

Typus: Brasil, Mato Grosso, estrada do Paranatinga, [14°26' S, 54°34' W], (fl male), Nov. 1914, **J.G. Kuhlmann 1204** [lectotype (here designated): R (the twig on the right side as well as some leaves in the capsule; see fig. 13)], "árvore 10–15 m; flores verdes" – Syntype: same data, (fl male), Nov. 1914, **J.G. Kuhlmann 1205** [R].

Note: Comparing the fragment of the lectotype with the old black and white photo in HOEHNE (1915: fig. 119), the twig was later broken and heavily damaged, as well as mounted on a sheet together with parts of another twig! The latter could be part of the now missing number **Kuhlmann 1203** which is also cited in the protologue. – Digital photos of the ruined types can also be seen via SpeciesLink on the internet.

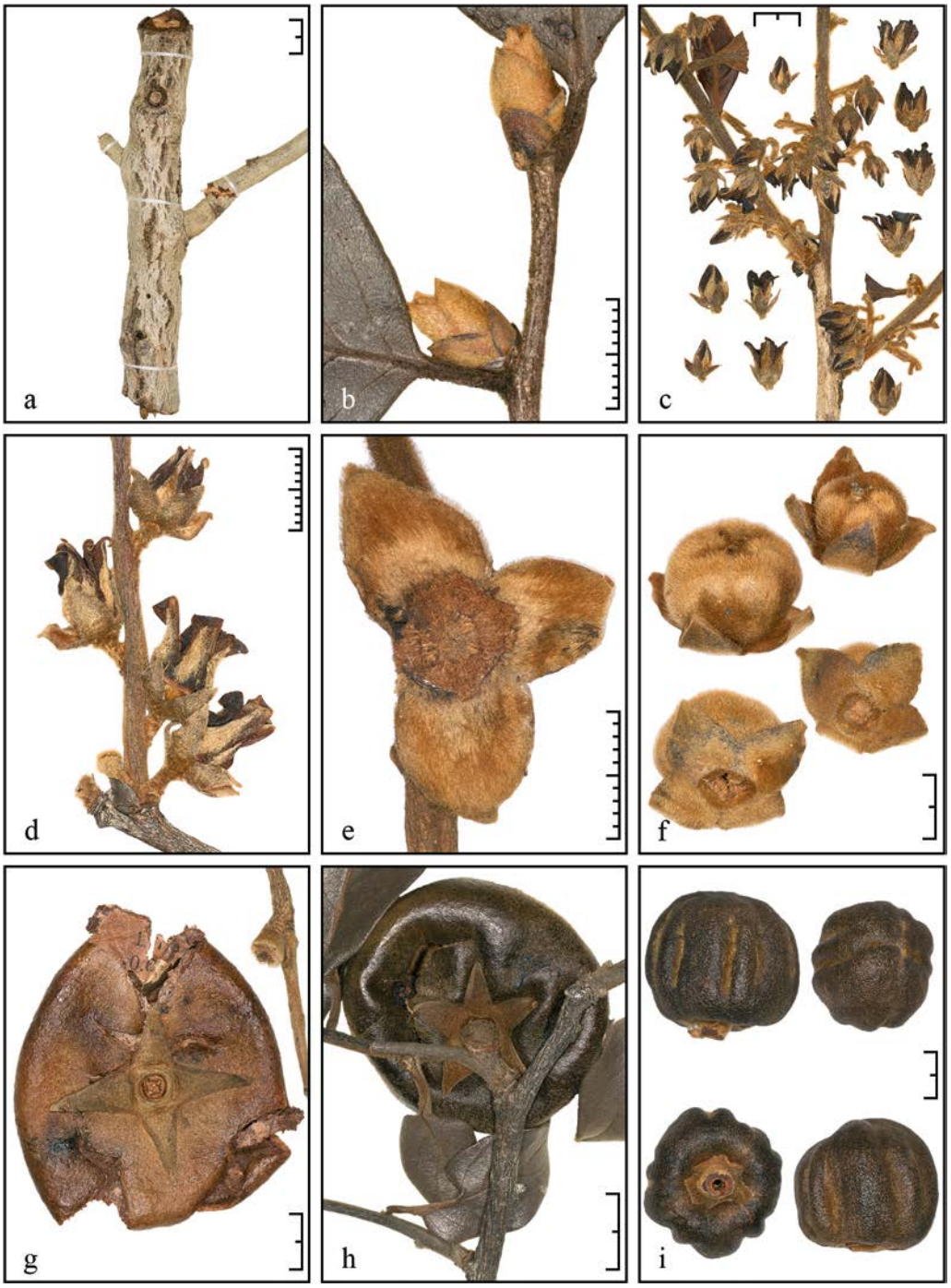
= *Diospyros coccolobifolia* ["*coccolobaefolia*"] MART. ex MIQ. var. *pubescens* HOEHNE, Commiss. Linhas Telegr. Estrateg. Matto Grosso Amazonas, Annexo 5, Bot., 6: 65–66, est. 118 (photo), 130: fig 1 (1915).

Protologue: "colhida na Campina, S. L. de Caceres, florescendo em Janeiro".

Typus: Brasil, Mato Grosso, Campina/Cáceres, [ca. 16°5' S, 57°45' W], cerrado, (fl female), Sep. 1911, **F.C. Hoehne 4597** [lectotype (here designated): R (see fig. 14)], "árvore; (P) alvo"; vernacular name: "Olho de Boi". – Syntypes: same data, (fl female), Sep. 1911, **F.C. Hoehne 4596** [R]; (fl female), Sep. 1911, **F.C. Hoehne 4598** [R].

Note: A black and white photo of the lectotype can be seen in HOEHNE (1915: fig. 118). Digital photos of the types are accessible via SpeciesLink on the internet.

Shrub, gnarled treelet or tree up to 15 (–36) m tall, dbh up to 50 cm, already flowering when (0.4–) 0.8–1 m tall, deciduous (sometimes tardily deciduous); concerning the bark see the chapter "habit"; buds (fig. 9b, 15b) up to ca. 2 cm long, 1.5 cm wide, resembling small cones (rarely present on herbarium specimens and probably developed quite late in the season); bud scales large, the basal ones ± semicircular, ca. 8 mm wide, the distal ones up to 18 mm long, ovate, rounded or obtuse, densely covered with appressed to slightly spreading, flexuose hairs; young twigs covered with a medium dense to very dense, often ferruginous indumentum composed of a layer of smaller, thinner, ± flexuose hairs of different length and of more spaced, up to 1.5 mm long, much larger and thicker, less flexuose, spreading or patent hairs (western populations with ± appressed hairs); twigs of the former season ± glabrescent, gray to brownish, covered with lenticels which often form longitudinal ridges; – **leaves** (fig. 8, 11–15) alternate; petioles (3–) 5–15 (–20) mm long, 1.5–4 mm thick, ± densely hairy (indumentum as on twigs), sometimes ± winged distally; young leaves covered on both sides with a silky-brown dense indumentum (hairs ± spreading or patent); leaf lamina lanceolate [= narrowly elliptic] to elliptic or ovate, sometimes ± circular or ± oblong, rarely narrowly lanceolate, ovate-lanceolate or obovate-lanceolate, (2–) 5–22 cm long, (1.5–) 3–16.5 cm wide, (1–) 1.5–2.5 (–3.7) times as long as wide, widest at or below the middle, firmly chartaceous or slightly coriaceous especially when old; adaxial leaf surface scattered to medium densely covered with ± ferruginous, slightly flexuose, usually patent hairs (western populations and those in Espirito Santo with ± appressed hairs), glabrescent and ± lustrous when old,



drying dark gray, gray-brown, dark brown or sometimes blackish-brown; abaxial leaf surface medium densely covered with slightly flexuose, spreading or patent, less frequently ± appressed, sometimes ferruginous hairs, drying brown to dark brown; leaf apex acute or obtuse, sometimes acuminate, broadly rounded or even ± truncate; base of the lamina cuneate to abruptly cuneate, truncate to slightly cordate; leaf margins entire, often with patent hairs, ± revolute at the base; flachnectaria on abaxial leaf surfaces minute, often only 0.2 mm wide, usually covered with a tuft of hairs and thus hardly visible, few to rarely ca. 50, 1–2 mm apart from the midvein (usually missing near base and apex of leaves), slightly embossed on adaxial leaf surfaces, missing on some leaves (especially on the very large ones); midvein on adaxial side sunken, ± flat distally (completely ± flat on very large leaves), densely covered with spreading or ± patent, less frequently (western populations) with appressed hairs, on abaxial side markedly prominent and densely covered with ± patent or spreading (sometimes appressed) hairs, intermixed with shorter, flexuose hairs; secondary veins 7–10 per side (proximal veins of the smaller, basal leaves of new shoots often very close together), ± straight or curved, slightly raised, scattered to medium densely covered with patent hairs adaxially, prominent and more densely hairy abaxially; higher order veins especially abaxially slightly raised or flat; – **inflorescences**: cymes placed in the axil of caducous bracts or of small leaves at the base of new long shoots (sometimes also on leafless short shoots, e.g., Almeida & Santos 247); male cymes (fig. 9c, 13) (2–) 3 (–5)-flowered; stalks (peduncles and pedicels) up to 8 (–15) mm long and 1.5 mm wide, densely hairy; pedicels of the lateral flowers up to (2–) 4 (–7) mm long, 1 mm thick; female cymes (fig. 9d) 1-flowered, sometimes ± crowded on leafless short-shoots (e.g., Kuhlman 3698); stalks (peduncles and pedicels) 2–5 mm long and ca. 2 mm thick, densely hairy (indumentum similar to the one on twigs); bracteoles 2.5–5.5 (–7) mm long, 1.5–2.5 (–4.5) mm wide in both sexes, widest at the base, acute to obtuse, densely hairy abaxially, glabrous or scattered hairy adaxially, soon caducous; – **flowers** (3–) 4–5 (–6)-merous (the females predominantly 4-merous; the number of lobes of the calyx and corolla differs sometimes even on the same flower in both sexes); male flowers (fig. 2f, 9c, 13) (7–) 12–18 mm long at anthesis (pedicels excluded), 5–10 mm wide; calyx (4–) 8–16 mm long and (6–) 7–12 mm wide, undivided in the proximal (1.5–) 2–5 mm, densely covered on both sides with an indumentum composed of slightly spreading, less frequently patent, ± straight long hairs and much shorter, flexuose hairs; calyx lobes (2.5–) 5–11 mm long, (1.5–) 4–6 mm wide, triangular, acute, flat; corolla (7–) 10–15 mm long at anthesis (when lobes erect), glabrous adaxially, on the outside densely covered with flexuose, short hairs intermixed with much longer, thick, ± straight, slightly spreading hairs along the keels of the lobes (broad lateral part of lobes usually glabrous, but sometimes also covered with tiny hairs); tube (1–) 2–4 mm long, 2–3 mm wide, ± funnel shaped; throat ca. 2–3 mm wide; corolla lobes (5–) 8–11 mm long and (2.5–) 4–6 mm wide, widest in the distal half or ± at the middle, acute,

◀ Fig. 9: *Diospyros lasiocalyx*: a: corky bark (from Eiten & Eiten 9211 [US]); – b: buds (from Warming 25-VI-64 [C]); – c: male inflorescences (from Rojas 10675 [US]); – d: female flowers (from Cervi et al. 7247 [W]); – e: calyx of a fruit, adaxial side (from Sellow 5628, lectotype [B]); – f: two young fruits with wide calyx lobes, as seen from above and below (from Glaziou 20407 [NY]); – g: fruit with narrow calyx lobes (from Mostacedo & Gonzales 3256 [NY]); – h: fruit (from Pirani et al. 1995 [NY]); – i: fruits (probably seedless) with irregular surface (Irwin et al. 11800 [NY]); – scale = 1 cm; – see also fig. 2f.

obtuse or rounded; stamens 14–25 per flower [14 and 15: Folli 2435 from Espirito Santo; 18: Ratter et al. R4413 from Tocantins; 19: Gottsberger 746 from São Paulo; 19 and 20: Kuhlmann 1204, and 1205 both from Mato Grosso; 21: Prance et al. 18878 from Mato Grosso; 21: Furtado IFRV 473 from Goiás; 22: Fonseca & Onishi 963 from Goiás; 22: Harley et al. 10209 from Mato Grosso; 22–24: Gehrt s.n. from São Paulo; 23: Eiten & Eiten 9211 from Mato Grosso; 25: Christenson et al. 1152 from Mato Grosso do Sul; SANTOS & SANO (2004) reported only ca. 12 stamens]; stamens (4–) 5–8 mm long, single or paired, not exserted; filaments 1.5–4 mm long and ca. 0.2 mm wide, scattered to medium densely covered with straight or slightly flexuose, long hairs adaxially, or rarely completely glabrous (e.g., Christenson et al. 1152), fused together near their base and adnate to the corolla tube 0.5–1 mm above its base, those of the paired stamens sometimes completely united; anthers linear, (2–) 3–5 mm long and ca. 0.3 mm wide; connectives acute, glabrous, or rarely with few, appressed, long hairs in the proximal half adaxially (e.g., Prance et al. 18878); rudiment of the ovary subglobose, 1–3 mm in diameter, densely hairy, lacking stylodia; – **female flowers** (fig. 2f, 9d, 14) (13–) 15–19 mm long at anthesis (pedicels excluded), 15–17 mm wide, covered with the same indumentum as the one on the male flowers; calyx (6–) 9–17 mm long and 12–15 mm wide, undivided in the proximal 2–6 mm; calyx lobes (4–) 5–15 mm long, 4–9 mm wide, broadly triangular, less frequently ovate-lanceolate, acute or long acuminate, flat or with ± revolute margins; area around the sinuses between the calyx lobes inconspicuous or ± protruding outwards (e.g., Kuhlmann 3698, Ratter et al. R4386); corolla sometimes as long as the calyx or longer, 10–14 mm long at anthesis (when lobes erect), glabrous adaxially, covered with the same indumentum abaxially as the one on male flowers; tube 2–7 mm long, ca. ca. 3–4 mm wide; throat ca. 2.5–3 mm wide; corolla lobes 7–11 mm long, 3–5.5 mm wide, widest in the distal half or at the middle, acute or obtuse; staminodia 4–13 [4 in a 4-merous flower of Ferreira et al. 6096; 5 in a 5-merous flower of Kuhlmann 3698; 6 in a 4-merous flower of Almeida & Santos 247; 8 in a flower with 4 calyx lobes and 5 corolla lobes of Hatschbach 27146; 13 in a 4-merous flower of Ratter et al. R4386]; staminodia if few then often episepalous, 5–7 mm long, 0.2–0.3 mm wide, linear, flat, acute, glabrous or sometimes with scattered hairs proximally (e.g., Ratter et al. R4386), adnate to the corolla tube 0.5–1 mm above its base; ovary usually 4-carpellate and 8-locular, or less frequently 5-carpellate and 10-locular, 7–8 mm long (including stylodia), 5–6 mm in diameter (including the 1.5 mm thick indumentum-layer), ± abruptly narrowed into the stylodia, very densely covered with ferruginous, spreading, later on patent, ± straight, long hairs; stylodia 4 or 5, 2 mm long, fused together in the proximal 0.5 mm, densely hairy except distally; stigmata widened and often bilobed; – stalk of the **fruits** 1–15 mm long, at the middle 3–8 (–12) mm thick, distally 4–10 (–16) mm wide, ± densely hairy; fruits (fig. 9e–i, 11, 15) usually up to 8-seeded, less frequently up to 10-seeded, oblate to ± globose, rarely longer than wide (e.g., Dorsett et al. 242b), up to 6 cm in diameter and up to ca. 5 cm in height, sometimes slightly pointed distally or (when apparently seedless) with broad longitudinal furrows corresponding to the margins of the carpels (e.g., Irwin et al. 11800, 34543, see fig. 9i, and the photo in DURIGAN et al. 2004; compare also fig. 2e), densely covered with spreading or patent, sometimes appressed hairs of different length and thickness when young, glabrescent except at the base and the apex when mature, with tightly adhering epidermis when dry, detaching with the calyx; fruit wall hard and up to 5 mm thick when young, 0.5–1 mm thick when ripe, consisting of stone cells; calyx on fruits up to 3.5 cm in diameter and ca. 0.5–1 cm

in height, undivided in the proximal 2–3 (–5) mm, densely hairy; lobes triangular, ovate-lanceolate or broadly ovate, up to 14 mm long, 7–13 mm wide (fig. 8, 9e–i, 11, 15), acute or sometimes ± acuminate, with flat or ± revolute margins, appressed to the fruit (except the apices); area around the sinuses between the calyx lobes usually inconspicuous, but sometimes slightly protruding outwards (e.g., Bernacci & Árbocz 2587); seeds bean-shaped, 16–24 mm long, 7–12 mm wide, 6 mm thick, dark brown to black when dry, foveolate.

Notes: This species is widely distributed, exceptionally variable and is treated here in a very broad sense. Unfortunately, many collections were physically not available for study, and I saw just digital photos, most of them via the two internet platforms for Brazilian herbaria: "Reflora" and "SpeciesLink". Additional photos (sometimes of rather bad quality) were sent by numerous persons. Specimens from remote areas were found to be underrepresented in herbaria. In many other cases the herbarium material was inadequate: either the male or the female flowers or the fruits were missing. A comprehensive study of certain somehow deviating populations was thus rendered impossible (e.g., Pirani et al. 1995 and Fiaschi et al. 2549 from southern and southeastern Bahia, as well as those in Espirito Santo). Generally, specimens with female flowers are rare in herbaria.

The range of leaf and flower size is remarkable, and could be explained with varying edaphic factors. Very large leaves are developed especially in fire-prone, open habitats with low shrubs and trees. During fire events minerals and nutrients are set free and seem to intensify and stimulate the growth of our plant. To a certain extent, the size of leaves seem, judging from herbarium specimens, to decrease with the increase in height of the trees. The same may also apply to the flower size. During the study of 771 collections it became evident that leaf size, flower size and indumentum alone cannot be used to segregate any further taxa because there are all sorts of intermediates (e.g., fig. 2f, 8–9, 11–15). The flowers differ in size even in the same population (fig. 2f, male flowers on left side).

Low individuals of the cerrado with large blades tapering into the petiole (see fig. 12) were called "*D. hispida* var. *camporum*" or "*D. burchellii*". – "*D. hispida*" s.str. and "var. *camporum*" were assumed to be vicariants: the former being an element of the tropical rain forests and the latter one of the cerrado and cerradão (RIZZINI 1963, HERINGER et al. 1977, SARMIENTO 1983, PEREIRA et al. 1985, GOTTSBERGER & SILBERBAUER-GOTTSBERGER 2006). In my opinion they are conspecific and seem to represent just adaptations to different habitats. Unfortunately, the characters used in the key in SOARES-SILVA et al. (2003) are in my opinion neither useful nor reliable for distinguishing "*D. hispida*" from the allegedly good species "*D. burchellii*".

Further investigation in the field is needed about pollination, sex ratio, phenology, response to fire, distribution of leaves of differing size and shape, the apparently seedless, longitudinally furrowed fruits, and about the underground organs. No chromosomal studies seem to have been carried out to date, and nothing is known about any potential changes in ploidy level.

Figures: twigs with male and female flowers, leaves, flowers and their organs (HOEHNE 1915: plate 118, 119, 130, fig. 1–2); twig, leaves, flowers, young fruit (SOARES-SILVA et al. 2003); twig with flowers, paired stamens (SANTOS & SANO 2004: fig. 1A–B); leaves,

flower bud, paired stamens, fruits (Santos & Sano 2007: plate 1, C–H); leaf venation (Figueiredo et al. 1971: fig. 17, 21, 25; Ellis et al. 2009: fig. 290); anatomical sections of seeds (Corner 1976: fig. 202–203); anatomical sections of the wood (Marcati et al. 2006); anatomical sections of branches (Marcati et al. 2016); pollen (Salgado-Labouriau et al. 1969, Salgado-Labouriau 1973).

Color photos: twig with fruits (Pott & Pott 1997); tree, bark, wood, twig with female flowers, fruits, seeds (Lorenzi 1998, 2002, in both publications under "*D. hispida*" and misidentified also under "*D. brasiliensis*"; one of these photos also in Souza & Lorenzi 2005); twig with hanging male flowers, fruits (Durigan et al. 2004); tree, corky bark, twig, sprouting vegetative bud, fruits: one of them with 4 calyx lobes, another one in cross section displaying 10 seeds (Pott et al. 2006); twig with a gall generated by a species of *Apion* s.lat. (Coleoptera) (Souza et al. 2006); twig with male flowers, female flower with pollinator (Gottsberger & Silberbauer-Gottsberger 2006, 2: 176, fig. 114a–b); a dissected bud and its components (Damascos 2008: fig. 3); low plants, fruits (Ibanes et al. 2008a); bark, vegetative bud, leaves, male flowers, ripe fruit (Silva Júnior & Pereira 2009); branches with large leaves (Albernaz 2010: 47, fig. 29); a low plant with fruits, basal reiteration shoots after a fire event (Ibanes 2012); fruit (Kuhlmann 2012); twig with a fruit (Urbanetz et al. 2013: fig. 6I); plant with sprouting large buds and with corky bark shortly after a fire event (Dantas & Pausas 2013: fig. 1); twig with fruits (Studer et al. 2015: 501). Many color photos are available in the Internet under the name "*D. hispida*".

Habit: The species is highly variable with respect to the size! In the cerrados it is often a low, gnarled treelet but in remote, undisturbed, semideciduous or deciduous forests it can become a large straight-boled tree. In Mato Grosso a tree was reported to attain 36 m in height, having a trunk of 150 cm in girth one meter above ground level, and no buttresses (Ratter et al. R986); in Espirito Santo two trees with a height of 30–32 m, a dbh up to 50 cm, a circumference at breast high of 141–157 cm, a cylindrical bole of 20–26 m, and a crown diameter of 8–10 m were observed (Silva 222, Folli 6809); in Goiás a "tree ca. 25 m × 60 cm" was seen (Irwin et al. 11909); in Pernambuco another one with 20–25 m, and with a diameter of 35 cm (Andrade-Lima 69-5533); in Alagoas one reaching 23 m with a dbh of 40 cm (Nusbaumer 4253); and in southeastern Pará a large tree > 20 m was observed (Grogan 113). Only 40 cm and 50 cm tall flowering plants were collected in Paraguay (Casas & Molero 4063) and in Minas Gerais (Romero et al. 4664), respectively. Some more small plants with a height of only 0.6–1 m were found in flower or fruit in the Distrito Federal, in Mato Grosso, Minas Gerais, São Paulo, and in Tocantins (see the list of specimens).

According to the data given on herbarium labels, the bark was reported to be brown, light or dark gray, smooth or fissured, and to detach sometimes in large irregular scales (compare also fig. 15). In fire-prone habitats it is often corky with deep and wide longitudinal cracks. Furthermore the following was indicated: "with very pale fawn bark cracking and fissuring in a wavy pattern" (Ratter et al. R7986); "stem gray-black, rough, with black sub-layer, low buttressing" (Grogan 113); "with a deep squared pattern on the bark" (Ratter et al. R4413). The living inner bark is said to be pink, reddish, or occasionally also orange, the dead bark black inside, and the sapwood cream-colored or beige.

The indumentum on young shoots, twigs and also on leaves is often ferruginous (rusty). The leaves are coriaceous, less frequently chartaceous, shiny dark green adaxially, paler

or yellowish-green and dull abaxially, and sometimes longitudinally v-like folded adaxially (compare also fig. 15). Occasionally the venation was reported to be yellowish.

The flowers are said to be scented (GOTTSBERGER & SILBERBAUER-GOTTSBERGER 2006, 2: table 35, and as indicated on a few herbarium labels), and the male ones to point downwards (Harley & Souza 10209). This can also be seen on the photos in GOTTSBERGER & SILBERBAUER-GOTTSBERGER (2006, 2: fig. 114a–b) and DURIGAN et al. (2004). On herbarium labels, the corolla is commonly reported to be greenish or yellowish-green, less frequently it was indicated to be cream-colored, white, or even yellow. Apparently it becomes only after anthesis pink or reddish inside, and brownish when old. The herbarium label of Queiroz 2410 states: "flores com odor de jasmim com pétalas carnosas verdes tornando-se depois atropurpúreos". The stamens are said to be cream-colored or white, the ovary green, and the stigmata yellowish.

The fruits are green and covered with a ± ferruginous or golden-brown indumentum when unripe, yellow (or beige?) when ripe, and brown when old. Rarely the fruits are reported to be orange (Davidse et al. 12298, Queiroz et al. 10501, Sanaiotti 435, Paskin 112), or even red (Gottsberger & Posey 19-22183). The last report seems, however, to be doubtful. The fruit pulp is sweetish, white or pink, and has a smell like that of the goiaba [= *Psidium guajava* L.] (Nogueira et al. 293, Rezende & Teodoro 650, Bronholi et al. 6849, Oliveira et al. 64). The seed coat is black-brown, and the endosperm white. – Fully ripe fruits reach a diameter of ca. 6 cm (DURIGAN et al. 2004), and are rarely found because they are quickly eaten by various patrolling animals (POTT et al. 2006). Fruits seem not to ripen all at the same time.

As can be seen from the photos which I received in 2013 from Reginaldo Baião and which are accessible also via "Flickr" on the internet, the young leaves are partially reddish tinged and are densely covered with patent hairs. The large mature leaves are strongly uneven and bend, and slightly shiny adaxially. The 4- or 5-merous female flowers show greenish-yellow petals and stigmas. A fruit with a 5-merous calyx is greenish with small light dots (probably deriving from the subepidermal stone-cell agglomerations), slightly longitudinally furrowed and covered with a light brown indumentum. Seemingly the fruit is already ripe although still greenish. Inside it is beige, apparently soft, and the seeds are covered with a white layer of fruit pulp.

Distribution (fig. 10): *D. lasiocalyx* is a widespread and characteristic member of the cerrado biome (see for this, e.g., SARMIENTO 1983). In Brazil it occurs in the states of Alagoas, Bahia, Distrito Federal, Espirito Santo, Goiás, Maranhão, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pará, Paraíba, Paraná, Pernambuco, Piauí, Rio de Janeiro, Rondônia, São Paulo, and Tocantins. Furthermore it is also known from Santa Cruz in eastern Bolivia, and from few places in Amambay and Canendiyu in eastern Paraguay. A preliminary distribution map for Brazil (sub "*D. hispida*") was presented by OLIVEIRA-FILHO & RATTER (1995: 178, fig. 16, and 2000: fig. 7c). – It grows at altitudes of ca. 50 m in Espirito Santo, and up to elevations of 1400 meters in Minas Gerais and Goiás.

The species is rare in the northeast of Brazil and is restricted there apparently to more humid areas. An explanation for this can be found in CASTRO & MARTINS (1999). RATTER et al. (2003) summarized the data given in the former publication as follows: "They point out that across the cerrado region soil hydric deficiency increases in a southeast-northeast direction, as does mean temperature, and suggest that species distributions can be

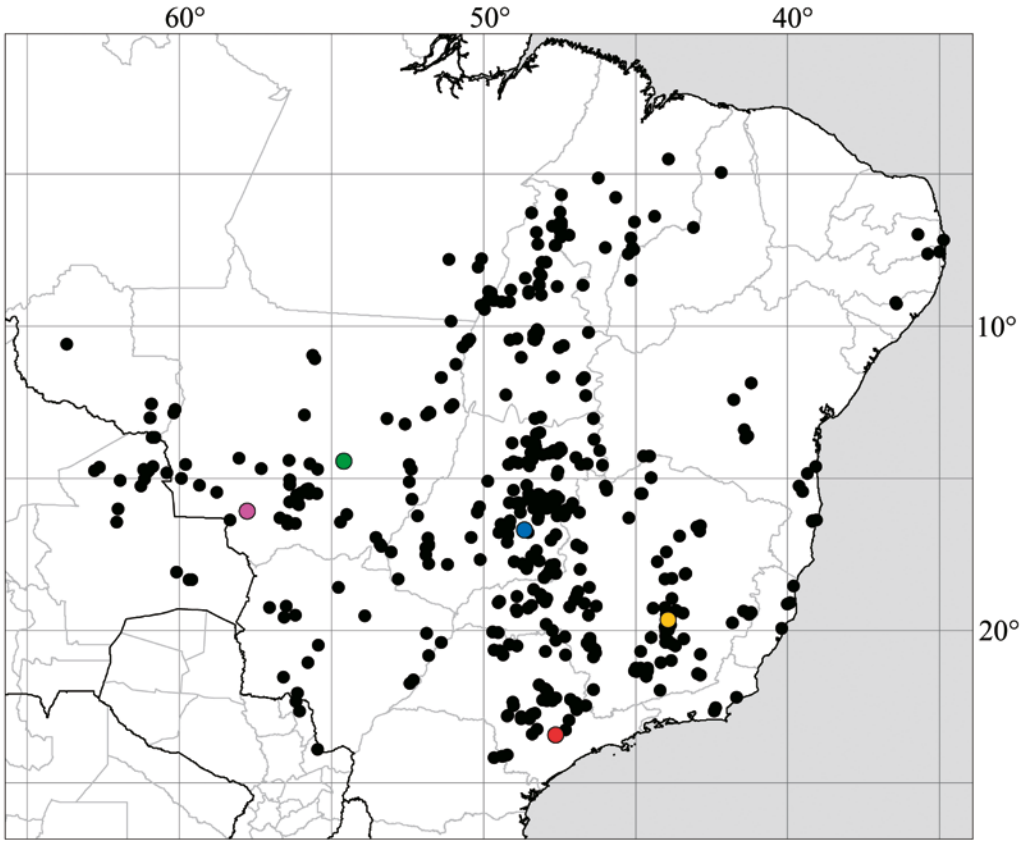


Fig. 10: Distribution of *Diospyros lasiocalyx* (●; type locality: ●; type localities of the synonyms: *D. burchellii*: ●, *D. coccolobifolia* var. *pubescens*: ●, *D. hispida* var. *camporum*: ●, *D. mattogrossensis*: ●).

correlated with this trend. They state that two climatic barriers cut across the region of the cerrados: occurrence of frosts to the south of 20°S, and of severe droughts to the north and east of 15°S, 45°W".

Habitat: *D. lasiocalyx* occurs in different types of the cerrado (wooded savannas rich on grasses) and in the cerradão (tall savanna woodland) which is limited to better grounds. It grows also in gallery forests ("mata de galeria") surrounding watercourses and in secondary forests ("capoeira"). To a lesser extent it enters also in deciduous or semideciduous forests ("floresta estacional decidual/semidecidual") but it avoids the dryer caatinga biome in the northeast of Brazil. It was often collected in areas covered with yellow or red latosol or with a sandy or clayey substrate.

In literature the following information can be found: it is "common in galleries with soils of intermediate fertility and is also found in cerradão and cerrado" (Oliveira-Filho & Ratter 1995); in the Distrito Federal it is "comum nos cerrados e matas de galleria" (for "*D. burchellii*"), and "cerrado, cerradão, campo sujo, matas de galeria" (for "*D. hispida*") (Soares-Silva et al. 2003); in São Paulo it occurs in "fisionomias campestres de

cerrado, em cerrado típico e em cerradão" (DURIGAN et al. 2004); near Paraopeba (Minas Gerais) it is "restricted to the dystrophic cerradão on red latosol" (NERI et al. 2012); it grows on "flood free or little floodable sandy soil" (POTT & POTT 1997). POTT et al. (2006) summarized: "muito freqüente em áreas que foram de cerradão. Ocorre tanto em pastagens recém-formadas quanto em mais antigas, uma das espécies que persistem após 20–30 anos; solos arenosos, também em argilosos de baixa a média fertilidade; mas a persistência na pastagem é via vegetativa; sobrevive a cortes e queimadas". ARAÚJO & HARIDASAN (1988) reported it as being an "exclusive species" for a "mesotrophic soil forest". RATTER et al. (1978) noted: "A few species encountered as fair-sized trees in the forest at Padre Bernardo [Goiás] are found in cerrado and cerradão on dystrophic as well as mesotrophic soils, e.g. *D. hispida*, ...; their presence possibly indicates the former existence in the locality of cerrado which has been encroached upon by forest". In the opinion of OLIVEIRA-FILHO et al. (1994) it is a light demanding "typical upland species" [in contrast to the "streamside species"] in montane semideciduous forests near Itutinga (Minas Gerais). According to CARDOSO & SCHIAVINI (2002), it has in the forests around Uberlândia (western Minas Gerais) a "distribuição predominante na mata mesófila semidecídua de encosta". In the Serra do Cipó (Minas Gerais) it occurs in semideciduous and deciduous forests, as well as in gallery forests and in the cerrado (SANTOS 2009). In southern Mato Grosso it is restricted to better-drained, sandy soils of the higher, interfluvial sites (interfluvial cerrado). It occurs there also on round earthmounds (the so called murundus) which reach up to 20 m in diameter and up to 2 m in height usually bearing termitaria, and which are scattered in a regular pattern over seasonally flooded grasslands (OLIVEIRA-FILHO & MARTINS 1991; compare also OLIVEIRA-FILHO 1992).

In Alagoas it was collected in a submontane ombrophilous forest type called "brejo de altitude" (Nusbaumer 4253, STUDER et al. 2015), and in an area covered with semideciduous to deciduous, open forests (Cervi et al. 7247). In Paraíba it was found in "lugares altos e frescos, terra de mata" (Moraes 937, 1062); in Bahia in the "mata de cipó" [floresta estacional decidual = deciduous forest] (Pirani et al. 1995); in Espirito Santo in tall "mata de tabuleiro" [a special type of semideciduous forest] (Assis et al. 930, Folli 2306, 2435, 6809, Silva 222; ROLIM et al. 2016); in eastern Minas Gerais and the adjacent Rio de Janeiro in the "mata atlântica" (Lopes & Andrade 713, Gomes 252, Paskin 112).

In Santa Cruz (eastern Bolivia) it was reported by KILLEEN & SCHULENBERG (1998) from cerrados ("matorral abierto"), and from the "pampa termitero" ("inundated savanna with termite mounds"). It was collected in semideciduous forests with elements of the cerrado or dominated by cusi [= *Attalea speciosa*] (Mostacedo & Gonzalez 3256, Guillén & Choré 1855, 3624); in a "cerradão" with up to 15 tall trees (Mostacedo & Abbott 2746); in the "pampa termitero" (Guillén & Choré 2425, 3735); in "bosque ribereño estacionalmente inundado" (Castro et al. 9, 44), and once also in a "bosque siempreverde, húmedo estacionalmente" (Guillén et al. 4544).

Adaptations to a fire-prone environment: Cerrados and cerradãos, the habitats of our species, are frequently afflicted by fire (COUTINHO 1982, MISTRY & BERARDI 2005, SIMON et al. 2009, CIANCIARUSO et al. 2012). *D. lasiocalyx* is one of the species which tolerates fire. In areas where fires tend to be more frequent, it develops a more or less thick corky bark (POTT & POTT 1997, POTT et al. 2006, DANTAS & PAUSAS 2013: fig. 1) which can also be seen on some herbarium specimens (fig. 9a). GOTTSBERGER

& SILBERBAUER-GOTTSBERGER (2006, 1: 136) noted: "In some woody species, such as *Aspidosperma tomentosum* or *Diospyros hispida*, the dormant apical buds usually escape destruction by fire, because they are protected by dense hairy cataphylls (bud scales)". It also resprouts easily from the ground (POTT & POTT 1997, POTT et al. 2006, IBANES 2012 with a color photo). According to SARTORELLI et al. (2007), "*D. hispida*" was one of the three species flowering shortly after a fire event. 114 individuals of "*D. hispida*" were studied regarding allometry in burned and unburned plots in a cerrado in São Carlos (São Paulo) after a fire incident (DODONOV et al. 2011).

Ecology and plant sociology: *D. lasiocalyx* is listed and mentioned under the names "*D. hispida*" and "*D. burchellii*" in many floristic and vegetation studies in Brazil (compare the overviews of OLIVEIRA-FILHO & RATTER 1995, RATTER et al. 1996). RATTER et al. (2003, 2006) carried out a comparison of the woody flora of 376 sites in the core area of the cerrado (in a broad sense) and its surroundings and reported "*D. hispida*" from 184 sites and "*D. burchellii*" from 29 sites. It is listed by BRIDGEWATER et al. (2004) among the 121, and by RATTER et al. (2006) among the 116 dominant woody species of the cerrado flora. According to OLIVEIRA-FILHO et al. (2006), it is one of the most frequent species in the tree flora (present in ≥ 70 % of the checklists) and is classified as being a member of the formations called by them "Low altitude tropical seasonal forests – Central-west region" and "High altitude tropical seasonal forests – Central-west region" within the seasonally dry tropical forests of South America. Our species is a member of the woody flora in 361 out of the 625 analyzed sites in the Brazilian cerrado (FRANÇOSO 2014). In the São Paulo state it was recorded in 51 % of 80 cerrado sites (DURIGAN 2006) and in 44 of the 86 surveyed areas (DURIGAN et al. 2003).

The density of the populations was reported to be low in many sites but in other areas higher numbers of individuals were recorded: according to IBANES et al. (2008a, 2008b) and IBANES (2012), 304 individuals were found in a plot of 0.675 hectare (45 m ×150 m) near Itirapina in the state of São Paulo. In a cerrado in the Pantanal near Poconé (Mato Grosso) 125 individuals were registered in an area of 0.25 hectare (MORAIS et al. 2013). MENINO et al. (2012) observed 17 individuals in their 70 study plots of 25 m^2 in an area of transition between deciduous forest and cerrado near Januária (northern Minas Gerais) and calculated an absolute density of 97.143 individuals per hectare. SILBERBAUER-GOTTSBERGER & EITEN (1983, 1987), SILBERBAUER-GOTTSBERGER (2001), and GOTTSBERGER & SILBERBAUER-GOTTSBERGER (2006, 1: 170) counted 81 individuals in an one hectare plot of cerrado near Botucatu in the São Paulo State. 54 of these were observed to flower and 11 to develop fruits in the course of the year. In another study in the same area 60 individuals in an one hectare plot were registered (GOTTSBERGER & SILBERBAUER-GOTTSBERGER 1983, 2006, 2: 353). OLIVEIRA-FILHO et al. (1994) counted 59 individuals with a diameter at the base of the stem ≥ 5 cm in an area of 0.945 hectare in a montane semideciduous forest near Itutinga (Minas Gerais). The density of a population in a cerradão near Padre Bernardo (Goiás) was indicated with 53 individuals per hectare by HARIDASAN (1987) and HARIDASAN & ARAÚJO (1988). In the course of 10 surveys carried out between 1985 and 2012 of 21 permanent parcels of 20 × 50 m (= 2.1 hectare) 5 to 42 individuals with a diameter ≥ 5 cm 0.3 m above ground level were registered by ALMEIDA et al. (2014) in a cerrado in the Distrito Federal. BALDUINO et al. (2005) reported 27 individuals pro hectare from a cerrado in Paraopeba (Minas Gerais).

The species is strongly susceptible to frost (BRANDO & DURIGAN 2004, SILBERBAUER-GOTTSBERGER et al. 1977). According to the former authors, all aerial parts of the studied plant were killed after a spell of frost.

Vast areas once occupied by cerrado and cerradão vegetation were cleared for pastures or agricultural purposes. Our species is regarded there as a noxious plant because after mechanical removal of the aerial parts it resprouts from the ground and persists over 20–30 years (POTT et al. 2006).

Population structure: The genetic and demographic structure of two populations in the state of São Paulo was studied in detail by IBANES (2012), [see also IBANES et al. 2010]. Local small stands ("reboleiras") were found to be composed of plants belonging to different genotypes. Sexual reproduction was detected in both populations but evidence supporting a certain degree of vegetative propagation was also found. Reiteration shoots at the base of the trunks are developed after fire events (see the photo in IBANES 2012: 88). According to the present author (Wallnöfer), it is still unknown whether or not our species may have the capacity to develop root shoots (suckers) as does for example *D. virginiana* in North America. This issue needs to be studied in the field. An interesting observation was noted on the label of Ratter et al. R7986: "tree with seven trunks arising from an area 2.5 m across (presumably coppice regeneration), forming a wide-crowned clump, 6 m tall; thickest trunk 20 cm dbh". – A demographic study of a population of "*D. burchellii*" was carried out in the Reserva Ecológica do IBGE (Distrito Federal) by SOUZA (2010).

Morphology, anatomy, phytochemistry, and physiology: According to LORENZI (1998, 2002) and SILVA JÚNIOR & PEREIRA (2009), the wood is moderately heavy (density 0.62 g/cm^3), soft, has a medium texture, is cross-grained, brownish-yellow, not resistant, and rots easily. The wood density was indicated with 0.348 mg mm^{-3} by BATALHA et al. (2011a, 2011b) and with 0.29 and 0.38 mg mm^{-3} by CIANCIARUSO et al. (2012). The wood was illustrated and described in MARCATI et al. (2006), who reported that growth rings are well defined. SONSIN-OLIVEIRA (2010) described the bark and wood in detail. Our species is also dealt with in PAULA & ALVES (2007). MARCATI et al. (2016) studied the cambial activity.

SALIS et al. (2014) revealed that the roots of a 2.8 m tall plant with a stem diameter of 7 cm at ground level reached an average depth of 0.5 m, and that the maximum length of the lateral roots was 4.5 m. SOUZA et al. (2011) investigated the crown structure and branching pattern. The shoot/foliage relationship of "*D. hispida*" was examined in detail by SOUZA et al. (2009a), and the influence of shoot inclination on irradiance and morphophysiological leaf traits by SOUZA et al. (2009b). A dissected vegetative bud and its components are shown in DAMASCOS (2008: fig. 3). – The anatomy of leaves was studied by FIGUEIREDO et al. (1971). The pollen was described and illustrated by SALGADO-LABOURIAU et al. (1969), and SALGADO-LABOURIAU (1973). CORNER (1976) examined the anatomy of the seeds of the collection Philcox & Fereira 4178 (indicated as "*Diospyros* sp.").

The chemical compounds and their biological activities were studied by ALBERNAZ (2010) and ALBERNAZ et al. (2010). BATALHA et al. (2011a, 2011b) measured the content of nitrogen, phosphorus, potassium, and of some other parameters (basal area, height, bark thickness, wood density, leaf toughness, etc.). According to HARIDASAN (1987),

and Haridasan & Araújo (1988), our species does not accumulate large amounts of aluminium.

Phenology: According to Sartorelli et al. (2007), and Damascos et al. (2005), *D. lasiocalyx* ("*D. hispida*") is a deciduous species which loses all its leaves for a period of one month towards the end of the dry season. Oliveira (1991, 1996) classified it as brevi-deciduous (tardily deciduous), and Pirani et al. (2009) as "sempre-verde sazonal" because leaf fall and sprouting occurs, at least in some areas, nearly simultaneously. This is probably the explanation for an apparently contradictory observation made by Ratter et al. (1978) who wrote: "… all the taller trees apart from *D. hispida* were deciduous …". The authors had obviously seen our species shortly before leaf fall had set in.

The buds seem to appear only towards the end of the dry season shortly before the old leaves are shed, and can thus rarely be seen on herbarium specimens. The organs are already preformed in the buds; the shoot and leaves expand before the beginning of the wet season when temperature raises, and the shoots grow during a short period (Damascos et al. 2005, Damascos 2008). Sartorelli et al. (2007) noted: sprouting of new leaves and twigs occurred 1.79 (± 1.4) respectively 1.88 (± 0.9) weeks after a fire event. The expansion of new leaves lasted 4.33 (± 0.6) weeks, and that one of the twigs 3.16 (± 0.9) weeks. The growth rate of new twigs was 0.69 (± 0.2) cm per day. The largest leaves reached 26 × 12 cm. An average of 7.8 (± 3.1) leaves was developed per twig. – According to Pilon & Durigan (2017), the range of the annual height increment of five individuals was 0.13–0.30 m, the reproductive age 5 years, and the height of the first individual to flower was 0.9 m. Pirani et al. (2009: table 1) studied nine individuals in a cerrado near Barra do Garças (Mato Grosso) and reported the following: leaf fall occurred predominantly in August and September, sprouting from August to November, flowering from August to September, and ripe fruits were found in October. According to Silva Júnior & Pereira (2009), new leaves are developed from August to October. The phenology of "*D. hispida*" was also studied and compared in detail in two areas of a cerrado near São Carlos (São Paulo state): the first still intact and the second one after a fire event (Lucena et al. 2015: fig. 1). Other studies were carried out in cerrados in Rio Verde, Goiás (Soares et al. 2015), and in Pratânia, São Paulo (Marcati et al. 2016). The results of these studies corroborated the ones given above.

A quite anomalous phenological behavior of our species was observed under cultivation over a period of four years near Assis in São Paulo (Pilon et al. 2015: 431): sprouting occurred all over the year; flowering was in February, March, May, and from September to November; fruits were observed in June and July; leaf fall was in March, May, July, August and October; leaves were absent in February, April, June, and August.

The large majority of the ca. 770 herbarium specimens which were examined in the course of the present study were collected in flower from September till November, and in fruit from (October) November till April (May). But some specimens were found in flower or fruit also in other months of the year.

Flowering occurs at the end of the dry and beginning of the rainy season when the temperature raises, and new sprouts are developed. In the literature it was reported to flower from August to November (Lorenzi 1998, 2002, Santos & Sano 2004, 2007, Pott et al. 2006, Gottsberger & Silberbauer-Gottsberger 2006); August to October (Silva Júnior & Pereira 2009, Borges & Prado 2014); September to October (Oliveira et

al. 2004); September to November (SOARES-SILVA et al. 2003); and from October to November (SILBERBAUER-GOTTSBERGER 2001). The latter noted that only 20% of the flowering individuals set ripe fruits. In this count she probably included male and female plants. – According to SALIS et al. (2009), it flowers in the Brazilian Pantanal in March, April, and from July to December.

Fruiting extends into the dry season. In fruit it was seen from October to August (SOARES-SILVA et al. 2003); November to February (BATALHA & MANTOVANI 2000); December to March (LORENZI 1998, 2002, SANTOS & SANO 2004, 2007, POTT et al. 2006); February to April (GOTTSBERGER & SILBERBAUER-GOTTSBERGER 1983); March to April (SILBERBAUER-GOTTSBERGER 2001); and from April to June (SILVA JÚNIOR & PEREIRA 2009). SILBERBAUER-GOTTSBERGER (2001) reported never having seen flowers and unripe fruits together at the same time on the same individual.

Pollination: Various insects were reported to visit the flowers: nocturnal microlepidoptera (SILBERBAUER-GOTTSBERGER & GOTTSBERGER 1988); moths (OLIVEIRA et al. 2004, CIANCIARUSO et al. 2012); "very small insects" (DEUS et al. 2014); beetles (Cucujoidae, Nitidulidae, *Mystrops* sp.; NETO 2009); butterflies, moths, and bees (SILVA JÚNIOR & PEREIRA 2009). RIBEIRO & TABARELLI (2002) observed medium-large bees visiting the flowers and reported them to be the pollinators. POTT & POTT (1997), and POTT et al. (2006) classified our species as a bee-plant ("apícola"), and the flowers are said to be melliferous (LORENZI 1998, 2002). The nectar concentration of ten flowers, and some floral parameters (corolla: diameter, length and base diameter, calyx: diameter and length, anther area, stigma area) were measured by GONÇALVES (2013).

GOTTSBERGER & SILBERBAUER-GOTTSBERGER (2006, 2: 176–177, fig. 114b) noted regarding our species the following observations: "In the cerrados of Botucatu, there were many more male plants than female ones. In the Botucatu population, male flowers were about ten times as numerous as female ones. Further, male flowers were clustered, while female ones were often solitary in the axils of leaves. The green-colored flowers (fig. 114) started to open in the evening, the petals of the bud loosened a little before sunset (5 PM) and petal spreading became visible about an hour after sunset (7 PM). Complete opening (reflexing of the petal tips) was not accomplished until about three hours later (10 PM). The flowers are variously disposed, from erect to pendulous (fig. 114a). During the nocturnal anthesis, flowers emitted a variable odor; it is a strong, sweet floral odor, with a strong fruity note, which may be mixed with a sharp, *Philodendron*-like one. The odor is emitted by both male and female flowers. When noctuid moths, apparently the main pollinators, imbibed nectar from the male flowers, they touched the stamens. When they visited the much rarer female flowers (fig. 114b), the moths deposited pollen on the stigma. During the night, on male flowers we observed the beetle, *Isonychus fuscipennis* (Melolonthinae) to copulate, enter the floral tube and eat pollen. Flowers remained open for at least two to three days and received some occasional diurnal visits by bees. Yet, by the second day, flowers showed signs of senescence, e.g., the corolla gradually became brown". – The moth shown on the photo (fig. 114b) could belong to the Pyralidae (Martin Lödl, pers. communication, July 2017).

Seeds, seed dispersal and germination: According to LORENZI (1998, 2002), one kilogram of seeds contains about 1.100 units. Germination occurs in 4–6 weeks and the germination rate is low. The development of the plant in the field is slow. SILVA JÚNIOR & PEREIRA (2009) reported 900–1100 seeds per kilogram. According to them, germination

reaches 30 % within 120 days after sowing. The desiccation tolerance and storage behavior of the seeds was studied by MAYRINCK et al. (2016).

The fruits are eaten and dispersed by the following animals: bats and non-flying mammals (GOTTSBERGER & SILBERBAUER-GOTTSBERGER 1983, 2006); the maned wolf, *Chrysocyon brachyurus* (MOTTA-JUNIOR & MARTINS 2002); the hoary fox, *Lycalopex vetulus* (DALPONTE 1997, DALPONTE & LIMA 1999; in both as "*D. coccolobifolia*" which does not occur in Mato Grosso); the white-lipped peccary, *Tayassu pecari* (KEUROGHLIAN et al. 2009); the Brazilian tapir, *Tapirus terrestris* (ZORZI 2009), and the wild Golden Lion Tamarin, *Leontopithecus rosalia* (DIETZ et al. 1997). The seeds are also dispersed by cattle (POTT et al. 2006). – The green fruit which is eaten by a bat shown on the photo in IBANES et al. (2008a) and IBANES (2012) does most likely not belong to *Diospyros*. The unripe fruits of that genus are green, hard, replete of tannins, and thus, probably only hardly edible.

Some larger birds are also eating the fruits and dispersing the seeds, like the rusty-margined guan (*Penelope superciliaris*) called "Jacú" in Minas Gerais (WARMING 1874). FERREIRA (2014) and FERREIRA & MELO (2016) reported the presence of some seeds of our species in the seed collectors under artificial roosts installed in a cerrado area in the Triângulo Mineiro in Brazil.

Biology: The larvae of a weevil identified as "*Apion* sp." (Coleoptera: Brentidae: Apioninae) generate large galls on the twigs (ARAÚJO et al. 1995, NESSIM et al. 2003, SOUZA et al. 2006: fig. 1B). According to the first authors, these galls are later on often inhabited by several ant species. An unidentified species of Buprestidae (Coleoptera) was reported to be mining in "*D. burchellii*" (BENDICHO et al. 1998). The larvae of an unidentified fly species belonging to Cecidomyiidae (Diptera) are reported to produce galls on the leaves (NESSIM et al. 2003, SOUZA et al. 2006). Four different species of lance flies pertaining to the genus *Neosilba* (Diptera: Tephritoidea: Lonchaeidae) were recorded to emerge from fruits of "*D. hispida*" (BOMFIM et al. 2014). According to these authors, one hundred percent of the examined fruits were infested by these flies. BELCHIOR (2014) and BELCHIOR et al. (2016) observed especially during the rainy season aggregations of an unidentified species pertaining to the Aleyrodidae (Sternorrhyncha, Hemiptera) sucking sap from the leaves of all individuals of "*D. burchelli*".

According to DINIZ et al. (2001), the following lepidopteran caterpillars were found feeding on "*D. burchellii*" and "*D. hispida*" in the Distrito Federal of Brazil: *Apodemia paucipuncta* (Riodinidae), *Compsolechia* sp. (Gelechiidae), *Fregella semiluna* (Arctiidae), *Hylesia murex*, *H. schuessleri* (Saturniidae), *Hypocala andremona* (Noctuidae), *Pseudodirphia agis* (Saturniidae), *Semyra incisa* (Limacodidae), and *Stericta abrupta* (Pyralidae). DINIZ et al. (2007) studied over a period of two years the caterpillar fauna on 15 plants of "*D. burchellii*" in the Federal District of Brazil. According to them, this species, common in the cerrado vegetation, is a deciduous plant which loses and replaces leaves during the transition from the dry to the wet season in September/October. The caterpillars of the moth genus *Inga* (Lepidoptera, Oecophoridae) were present from January to August on the host plant, being most frequent from May to July, which coincides with the first half of the dry season in the cerrado. The total absence of any species of *Inga* from September to December corresponds to the leaf fall and the following flush of new twigs. Mature leaves are present from March to August, coinciding with the highest

abundance of *Inga* species on them. The authors assumed that the preference of the caterpillars for mature or senescent leaves could be due to the low density of trichomes found on them (young leaves are namely densely hairy on both surfaces), or perhaps reflects lower concentrations of protective chemicals. *Inga haemataula* was the most abundant species, accounting for 75% of all *Inga* fauna on "*D. burchellii*". The other species observed on the same host plant were: *I. corystes*, *I. encamina*, *I. phaeocrossa* and three other unidentified species.

Very unfortunately, SCHOEREDER et al. (2010), BELCHIOR (2014), and BELCHIOR et al. (2016) overlooked the presence of the tiny and scattered flachnectaria (extrafloral nectaries) on the leaves of our species, and seem to have come partially to wrong conclusions in their studies regarding ant-plant interactions.

The host of the rust fungus *Aecidium annonae* HENN. (Pucciniales) was erroneously assumed to be a species of *Annona* (Annonaceae). A reexamination of the type material (Ule 1919) by the author (Wallnöfer) revealed the host to be *D. lasiocalyx* (BEENKEN 2014, 2017). *Aecidium calosporum* JUEL and *A. muelleri* THURST. have also been reported to parasitize on "*D. hispida*" (HENNEN et al. 2005), but according to BEENKEN (2017), they could be conspecific with *Aecidium annonae* HENN. In that case the latter name would be, unfortunately, the oldest valid name of this taxon. *Pseudocercospora kaki* causes on this species too the disease called "Leaf spot of persimmon" (DAVID 2000). – The epiphyllous fungus *Asterolibertia barrinhensis* FIRMINO & DIANESE (Asterinaceae, Asterinales) was collected on leaves of "*D. burchellii*" and described as a new species (FIRMINO et al. 2016).

Vernacular names: In Brazil it is frequently called "olho-de-boi", and "caqui-do-cerrado" (POTT & POTT 1997, LORENZI 1998, 2002, SOARES-SILVA et al. 2003, DURIGAN et al. 2004, POTT et al. 2006, SANTOS & SANO 2007, and as indicated on many herbarium labels). Other vernacular names are: "bacupari-bravo" (WARMING 1874, CORRÊA 1952, LORENZI 1998, 2002, SILVA JÚNIOR & PEREIRA 2009), "caquizeiro-da-mata" (SILVA JÚNIOR & PEREIRA 2009), "falso-louro-preto" (POTT et al. 2006); "fruta-de-boi" (POTT & POTT 1997, LORENZI 1998, 2002, POTT et al. 2006), "fruta-de-jacu-fêmea" (WARMING 1874, CORRÊA 1952, LORENZI 1998, 2002, SANTOS & SANO 2007), "jilozeiro" (SILVA JÚNIOR & PEREIRA 2009).

The following names (some of them need to be confirmed) are used only locally: **Alagoas** and **Pernambuco**: "louro-carvão", and "louro-preto" (STUDER et al. 2015, Cervi et al. 7247, Nusbaumer 4253); – **Bahia**: "canela de urubú" (Bondar 2108, 2276); "caqui bravo" and "macaqueira" (both: Araújo 60); "pindaiba amarela" (Euponino 559). The following names were indicated by F.S. Santos on his herbarium labels, but they seem to need confirmation: "angelim" (no. 723), "pindaiba preta" (no. 726), "jiquitibá" (no. 917), and "genipapinho" (no. 918); – **Distrito Federal**: "caqui-do-mato", and "guapeva" (SERVIÇO FLORESTAL BRASILEIRO 2016); "marmelada" (PEREIRA et al. 1985); – **Espirito Santo**: "abricó da mata" (Folli 1246, 2306, 2435, 6809); "júnior baiano" (Silva 222 or 222/80); – **Goiás**: "fruta-de-cotia" (Magnago 343); "guapeva" (Rizzo & Barbosa 5555); "sobro" (Duarte 1); – **Maranhão**: "caqui do campo" (Gottsberger & Gottsberger 32-20282); – **Mato Grosso**: "araticum bravo" (Lemes 4067); "casca d'anta" (Bernacci 2432); – **Mato Grosso do Sul**: "fruta de lobo" (Dubs 230, 410, 738); – **Minas Gerais**: "abricó da mata" (Luz 9, 331); "bacupari" (Kuhlmann 84); "bringela do mato" (Warming

s.n.); "caquí amarelo" (Luz 392); "caquí peludo" (Luz 9, 331); "caquí-do-mato" (Mendonça et al. 346, Neto 175, 532, Wilson 877); "caquizeiro da mata" (Ferreira 2014); "fruta de jacú do campo" (Warming s.n.); "fruta do macaco" (Kuhlmann 84); "fruto de jacú" (Araújo 639); "guapeva brava" [with "?"] (Macedo 403, 403a); "guapeva" (Macedo 1227); "macagueira" (Kuhlmann 84); "marmelada" (Carvalho et al. 1995); "panacéa" (Labouriau 732); "pessego do mato" (Junior & Silva 536); – **Pará**: "cafui" (Fonseca et al. 2005); – **Paraíba**: "chauá" (Moraes 937); – **Rondônia**: "pau ferrugem" (Prestes DRL 2212-120-1996); – **São Paulo**: "bacupari" (Guimarães 1497); "caqui-do-campo" (Melo & Chiea 185); "fruta-de-boi" (Santos & Sano 2007, Ishino 97); "mangalô" (Pastore et al. 757); "mucuíba" (Albernaz 2010). – In Santa Cruz (**Bolivia**) it is called "ojo de guazo" (Guillén et al. 4544).

Use: According to Lorenzi (1998, 2002) and Silva Júnior & Pereira (2009), the wood is used only locally for internal work in rustic constructions, tool handles, oxen yoke, as firewood, and for charcoal. The sweetish pulp of the ripe fruits is eaten fresh by rural communities (Bortolotto et al. 2015, Silva Júnior & Pereira 2009, and as indicated on several herbarium labels). "*D. hispida*" is used by the communities of the cerrado for the treatment of infectious diseases (Albernaz 2010, Albernaz et al. 2010, see also Bernacci 2432). Cattle eat the fruits but browse only little on sprouting leaves and twigs (Lorenzi 1998, 2002, Pott & Pott 1997, Pott et al. 2006). According to Pott & Pott (1997), and Pott et al. (2006), it is a bee-plant ("apícola"). It is suitable for restoration of degraded areas (Silva Júnior & Pereira 2009).

Specimens examined: **Brasil**, Maranhão, Municipality of Codó (4°30' S, 43°54' W), "Fazenda Canto da Roca (spoken: Rossa)", [ca. 4°30' S, 43°54' W], tabuleiro, (st female), 20 Feb. 1982, **I. Gottsberger & G. Gottsberger 32-20282** [ULM n.s., W], "tree 2 m tall"; – Mun. Grajaú, estrada do Arame, [ca. 5°7' S, 46°13' W], vegetação de chapada (cerrado) solo arenoso, (fr), 15 Apr. 1983, **M.F.F. da Silva et al. 1132** [FHO, HBG, INPA, MG n.s., NY n.s., W], "árvore de 2,5 m; fruto imaturo verde"; – Mun. Imperatriz, "Bananal", 15 km S of Imperatriz along Belém/Brasília highway (BR-010), 290 m, ca. 5°40' S, 47°26' W, cerrado with deep, sandy, rusty red soil; in tree island in savanna cerrado, (fr), 29 Feb. 1980, **T. Plowman et al. 9355** [FHO, INPA, MG n.s., NY n.s., W], "treelet 3 m; fruit green"; – Canela Indian village & vicinity, ca. 50 km SW of Barra do Corda, ca. 500 m, [5°46' S, 45°39' W], region of cerrado woodland & gallery forests; tree & scrub woodland & savanna cerrado, (fr), 26 Jan. 1977, **G. Eiten 406** [NY], "small tree"; – Município Estreito, canteiro de obras do UHE [Usina Hidrelétrica] Estreito (área da subestação), 150 m, 6°34'51" S, 47°27'39" W, cerrado; solo arenoso, (fr), 11 Mar. 2007, **G. Pereira-Silva & G.A. Moreira 11386** [CEN n.s. (dig. photo)], "árvore 3 m; fruto imaturos verdes"; – canteiro de obras da AHE [Aproveitamento Hidrelétrico] Estreito, margem direita do rio Tocantins, 230 m, 6°35'3" S, 47°26'48" W, cerrado; plintossolo, (fr), 18 Feb. 2005, **G. Pereira-Silva et al. 9313** [CEN n.s. (dig. photo), W], "árvore 3 m, frequente no local; fruto verde"; – same area and collectors: Fazenda do Sr. Sebastião Leite, parcela 1, 180 m, 6°35'24" S, 47°26'19" W, cerrado; solo argilo-arenoso com afloramento de plintossolo, (fl male), 19 Oct. 2005, **10203** [CEN n.s. (dig. photo), W], "árvore 3,1 m, frequente no local; botão floral verde"; – same area and collectors: Fazenda do Sr. Francisco do Leite, 200 m, 6°35'19" S, 47°26'25" W, floresta semidecidual antropizada; solo arenoso com presença de matacões de plintossolo, (fl female), 20 Oct. 2005, **10251** [CEN n.s. (dig. photo), W], "árvore 6 m, frequente no local; botões florais verdes"; – ao lado da agrofloresta da Fazenda Balneário rio das Pedras, lado esquerdo, 150 m, 6°37'58" S, 47°25'42" W, área antropizada na borda da mata; solo arenoso, (fr), 22 Feb. 2005, **9580** [CEN n.s. (dig. photo), W], "frequente no local; fruto imaturos verdes"; – road Carolina to Estreito, 2–15 km from Estreito, [ca. 6°40' S, 47°26' W], low forest; transition from cerrado to Amazonia, (fl male), 9 Aug. 1964, **G.T. Prance & N.T. Silva 58601** [FHO, NY n.s., W], "tree 4 m × 10 cm diam.; corolla yellow"; – margem direita do rio Farinha, estrada para a fazenda do Sr. Sebastião Setalar, 150 m, 6°51'1" S, 47°28'31" W, mata ciliar; solo arenoso, (fr), 25 Apr. 2008, **G. Pereira-Silva et al. 13309** [CEN n.s. (dig. photo)], "árvore 4 m "; – Município de Carolina, Transamazonian Highway, BR-230 and BR-010, Pedra Caida, 35 km N of Carolina, cerrado near BR-010 NE of ponto turístico between road and Rio Pedra Caida, [7°2' S, 47°25' W], sandy soil, (fr), 16 Apr. 1983, **E.L. Taylor et al. E1284** [FHO, NY n.s.], "small tree 3 m;

fuzzy brown fruits, with persistent brown calyx"; – Morro de Baleia, ca. 2 km towards Carolina from Pedra Caída on the Estreito/Carolina road, 7°3' S, 47°27' W, in cerrado vegetation on rocky slopes, (fr), 1 Jul. 1993, **J.A. Ratter et al. R6714** [E, K], "small tree 3.5 m tall; charred fruits collected from the ground"; – Carolina, margem direita do rio Farinha, cachoeira do Prata, faz. do Sr. Pedro Pereira Caneiro, 270 m, 6°59'42" S, 47°9'56" W, mata de galeria; solo arenoso, (fr), 15 Jan. 2008, **G. Pereira-Silva & G.A. Moreira 12705** [CEN n.s. (dig. photo)], "árvore 3 m; frutos imaturos verdes"; – Município Mirador, PEM [Parque Estadual de Mirador], [ca. 6°33' S, 45°1' W], cerrado, (fr), Feb. 1999, **G.M. Conceição 564** [TEPB n.s., UEC n.s. (dig. photo)], "arvoreta; fruto verde imaturo"; – Aldeia, Mirador, [ca. 6°22' S, 44°22' W], cerrado, (st), 8 Apr. 1998, **G.M. Conceição s.n. (EAC 27403)** [EAC n.s. (dig. photo)], "arbusto"; – Barão do Grajaú, ca. 10 km da cidade na BR-230, 130 m, 6°43'54" S, 43°5'8" W, cerrado, (fr), 25 Jan. 2012, **R.M. Harley et al. 56464** [HUEFS n.s. (dig. photo)], "árvore ca. 4,5 m; tronco suberoso; folhas discolores, face superior verde mais escuro; frutos verdes"; – Loreto, distante 8 km retornando do Posto Avançado Mel, [ca. 7°5' S, 45°8' W], cerrado impactado; latossolo amarelo, (fr), 27 Jan. 2011, **L.M.M. Carreira et al. 3004** [MFS n.s. (dig. photo), MG n.s.], "árvore ca. 2 m"; – 12 km N of Balsas on the São Raimundo das Mangabeiras road, 7°40' S, 45°50' W [correct seems to be: ca. 7°24' S, 45°59' W], cerrado, (st), 13 Jul. 1993, **J.A. Ratter et al. R6822V** [E, K], "tree 2 m tall"; – Município de Loreto, "Ilha de Balsas" region between the Balsas and Parnaíba rivers, ca. 40 km S of Loreto at "Barra Verde", 350 m, 7°24' S, 45°6' W, on top part of "costaneira" slope covered with cerrado scrub, (fr), 7 Feb. 1970, **G. Eiten & L.T. Eiten 10490** [K, MO, NY, US], "tree 3 m tall; fruit green"; – ca. 6 km N of community of Santa Bárbara on the Parnaíba river, "Chapada Alta" ca. 3 km N of its south edge, 450 m, 7°28' S, 45°3' W, on the plateau top; low-tree woodland of cerrado, (fr), 17 Feb. 1970, **G. Eiten & L.T. Eiten 10654** [MO, SP, US], "shrub 2 m tall"; – Município Balsas, Projeto de colonização agrícola BATAVO/Campo, região de reservas de cerrado próximas ao córrego Tem Medo, 470 m, 8°38' S, 46°43' W, cerrado sensu stricto; grande densidade de arbustos; latossolo amarelo-arenoso, (defl), 10 Nov. 1996, **B.M.T. Walter et al. 3556** [CEN n.s. (dig. photo)], "árvore 3,5 m; sépalas ferrugíneas; pétalas marrons (flores velhas)".

Piauí, Campo Maior, base da Serra do Bugari, [ca. 4°56' S, 42°10' W], (fr), 6 Mar. 2010, **A.S.F. Castro 2304** [EAC n.s. (dig. photo)], "arvoreta"; – Mun. Ribeiro Gonçalves, [ca. 7°36' S, 45°14' W], cerradão; área antropizada, (yfr), 19 Nov. 2005, **A.M. Miranda et al. 5215** [EAC n.s. (dig. photo), HUEFS n.s. (dig. photo), PEUFR n.s.], "arbusto ca. 1,6 m; caule adulto marrom, jovem verde; folhas membranáceas; frutos imaturos verdes"; – Serra Grande, 8°28' S, 45°8' W, cerrado, (fr), 24 Mar. 1978, **J.S. Assis 100** [RB n.s. (dig. photo)], "árvore 4 m; cálice cinza; frutos jovens verde-amarelados"; – without data, (fr), 26 Jun. 1931, **Alencar 29** [RB n.s. (dig. photo)], "árvore campestre; fruto comestível".

Paraíba, Município de Areia, [ca. 6°58' S, 35°42' W], lugares altos e frescos; terra de mata, (fl male), 14 Apr. 1954, **J.C. Moraes 937** [SPF n.s. (dig. photo), SPSF n.s.], "árvore"; – same data but: (fl female), 3 Apr. 1954, **1062** [SPF n.s. (dig. photo), SPSF n.s.], "árvore feminina; flores verdes"; – João Pessoa, Mata do Buraquinho, [7°9' S, 34°52' W], (fl male), 26 Dec. 1969, **D. de Andrade-Lima 69-5634** [IPA n.s., RB n.s. (dig. photo)], "árvore 6–9 m; flores esverdeada".

Pernambuco, Timbaúba, Eng. [Engenho] Água Azul, [7°37' S, 35°23' W], mata, (fl male), 26 Feb. 1969, **Andrade-Lima 69-5533** [IPA n.s., RB n.s. (dig. photo)], "árvore 20–25 m, 35 cm diâmetro; casca desprendendo em laminas pequenas, esc."; – Goiana, Usina N.S. Maravilhas, [ca. 7°32' S, 35°0' W], borda da mata, na chã, (yfr), 23 Mar. 1956, **A. Lima 56-2542** [FHO, INPA n.s., IPA n.s.], "árvore 6–7 m; frutos novos com pelos rufescentes".

Alagoas, Município de Quebrangulo, Reserva Biológica de Pedra Talhada, 550 m, 9°15' S, 36°25' W, mata aberta; agreste; área de transição florestas estacional semídecidual/decídual; contrafortes da Borborema; solos argilosos profundos com afloramentos de rochas (gneiss), (fl female), 22 (29) Nov. 1994, **A.C. Cervi et al. 7247** [G 2×, NY n.s. (dig. photo), W], "árvore 15 m; flores verdes claro"; – same area: 770 m, 9.221062°S, 36.440634°W (WGS 84) [9°13' S, 36°26' W], forêt ombrophile submontagnarde (submontane ombrophilous forest), forêt de pente faible, (fr), 28 Oct. 2014, **L. Nusbaumer LN 4253** [G n.s. (dig. photos), JPB n.s., NY n.s. (dig. photo); see also fig. 15], "arbre 23 m, 40 cm DBH; fr. vert à 6–8 graine blanches translucides, 4 sépales persistants, tronc brun foncé desquamant comme *Platanus*, feuilles arquées en carène de bateau, càd à section transversale en V".

Pará, "Reserva Florestal de Gorotire" (Kayapó-Indian Reservation), surroundings of Gorotire village at Rio Fresco, ca. 200 m, 7°47' S, 51°7' W, forest trail close to village; mostly secondary forest (= capoeira), 8–10 years old (8–15 m tall), (fr), 22 Jan. 1983, **G.K. Gottsberger & D.A. Posey 19-22183** [K, ULM], "4 m tall;

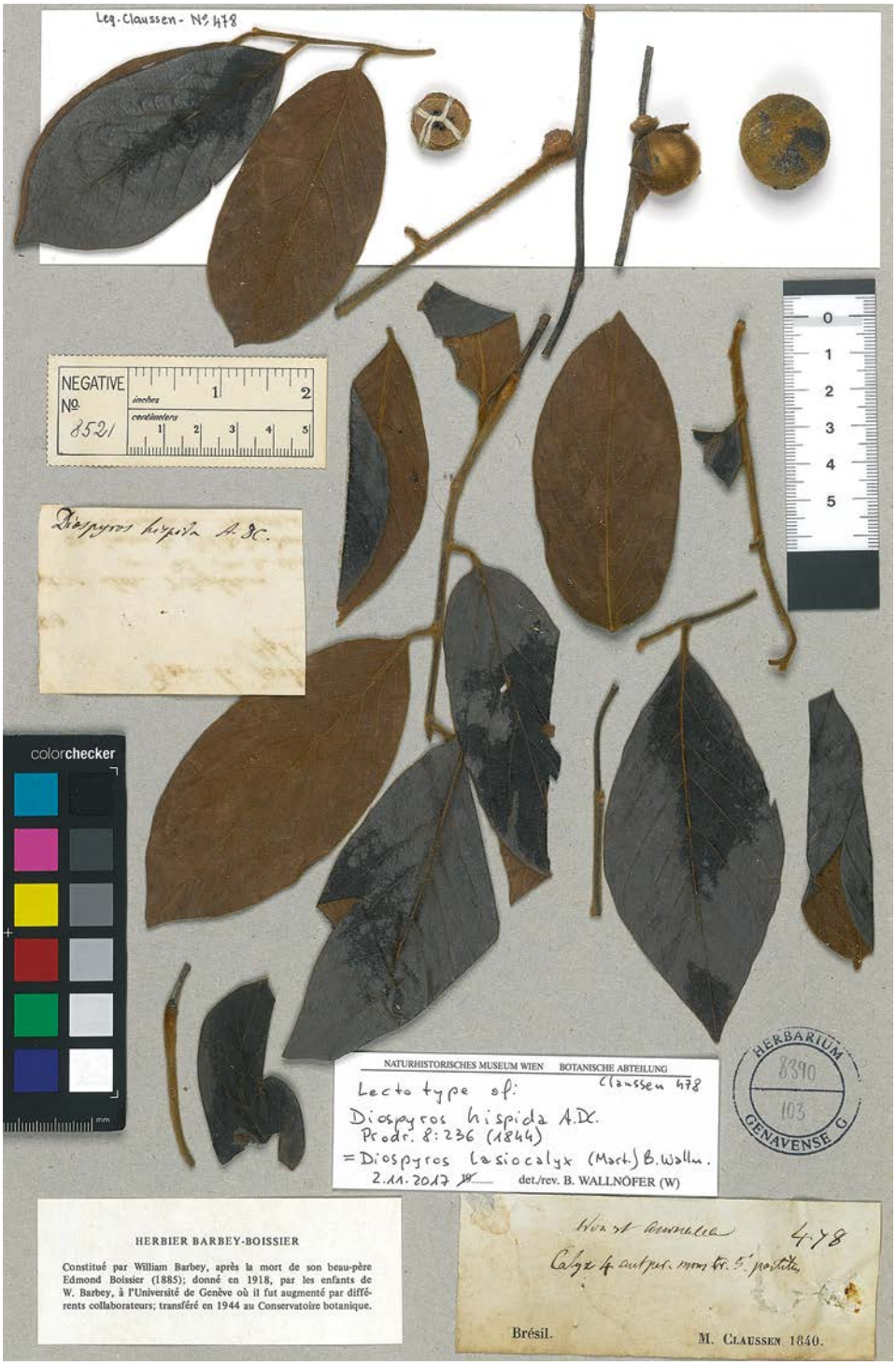


Fig. 11: Lectotype of *Diospyros hispida* A.DC. [G-BOIS].

fruits unripe green, ripe red"; – Pau D'arco, Marajoara, [7°46' S, 50°3' W], (yfr), 1 Nov. 1997, **J. Grogan 113** [IAN n.s., INPA n.s. (dig. photo)], "large tree > 20 m; stem gray-black, rough, with black sub-layer, low buttressing; flowers green; fruits large, immature"; – Mun. Conceição do Araguaia, range of low hills ca. 20 km W [E?] of Redenção, near Córrego São João and Troncamento Santa Teresa, 350–620 m, ca. 8°3' S, 50°10' W, in forest, (fr), 8 Feb. 1980, **T. Plowman et al. 8493** [FHO, INPA, MG n.s., NY], "tree 16 m × 30 cm diam.; fruits globose, green"; – Rio Araguaia, Rio Inajá, margem esquerda, [ca. 8°50' S, 49°49' W], cerrado, (fl male), 13 Aug. 1978, **N.T. Silva 4816** [MG n.s., NY 2×, UEC n.s. (dig. photo)], "árvore 1,5 m, 6 cm diâmetro; flor verde"; – próximo a Conceição do Araguaia, 8°53' S, 49°45' W, campo cerrado, (yfr), 12 Aug. 1978, **E. Mileski 159** [RB n.s. (dig. photo)], "arbusto 3 m; frutos jovens de coloração verde escuro"; – Foz do Rio Inajá, [8°53' S, 49°44' W], cerrado, (yfr), 12 Aug. 1978, **N.T. da Silva 4809** [F, INPA n.s. (dig. photo), MER n.s., MG n.s., MO, NY, RB n.s. (dig. photo), UB], "árvore 4 m, 10 cm de diâmetro; fruto imaturo"; – Barreira de Campos [do Campo], [ca. 9°18' S, 50°4' W], cerrado, (fr), 18 Aug. 1978, **N.T. Silva 4849** [MG n.s., NY 2×, UEC n.s. (dig. photo)], "árvore 2 m, 8 cm de diam.; fruto imaturo"; – same data: (fl male), **4851** [MG n.s., MO, NY], "árvore 4 m, 40 cm diam.; cálice e corola verdes".

Tocantins, Município Ananas, Fazenda Furna Azul, 125 m, 6°15'34" S, 48°25'0" W, mata; solo areno-argiloso, (fr), 21 Apr. 2004, **G. Pereira-Silva et al. 8866** [CEN n.s. (dig. photo), W], "árvore 15 m; frutos imaturos verdes"; – Mun. de Tocantinópolis, 6°14' S, 47°28' W, solo arenoso, (fr), 22 Nov. 1983, **E. Mileski 382** [HUEFS, RB n.s. (dig. photo)], "árvore 5 m; diam. do fuste 40 cm; diam. da copa 3 m; caule castanho"; – Darcinópolis, estrada Darcinópolis/rio Tocantins via fazenda do Marcelo, km 4, encontro do rio Ribeira com o rio Curicaca, 230 m, 6°42'21" S, 47°42'46" W, mata de galeria; solo arenoso, (fr), 16 Apr. 2008, **G. Pereira-Silva et al. 12970** [CEN n.s. (dig. photo)], "árvore 4 m; frutos imaturos verdes"; – Município de Piraquê, bacia do Araguaia, sub-bacia do rio Lontra (A-14, pto 248), 190 m, 6°54'2" S, 48°15'22" W, capoeira; solo arenoso, (fr), 16 May 2010, **F.C.A. Oliveira et al. 2102** [HUTO n.s. (dig. photo), IBGE n.s., SPF n.s. (dig. photo)], "árvore ca. 5 m, 8 cm DAP; folhas cartáceas; frutos imaturos cor verde"; – ca. 10 km S of Araguaína, ca. 300 m, [7°17' S, 48°12' W], sandy cerradão, (fr), 16 Mar. 1968, **H.S. Irwin et al. 21248** [NY], "tree ca. 3 m × 5 cm; fruit green"; – Município Filadélfia, estrada Filadélfia/Babaçulândia, próximo à foz do rio Tranqueira, 170 m, 7°19'46" S, 47°38'25" W, floresta estacional; areia quartzosa, (fr), 1 Mar. 2005, **G. Pereira-Silva et al. 9737** [CEN n.s. (dig. photo), W], "árvore ca. 6 m; fruto imaturos verdes"; – Filadélfia, rodovia TO-222/Babaçulândia, km 5, via Canabrava, 200 m, 7°19'47" S, 47°36'10" W, cerrado; solo arenoso, (fr), 17 Jan. 2008, **G. Pereira-Silva & G.A. Moreira 12736** [CEN n.s. (dig. photo)], "árvore 8 m; frutos imaturos verdes"; – Município de Palmeirante, sub-bacia do rio Tocantins (T-1, área 2, pto 33), Fazenda Macaúba, 206 m, 7°53'29" S, 48°4'22" W, cerradão antropizado; solo arenoso, (fr), 13 May 2010, **F.C.A. Oliveira et al. 1951** [HUTO n.s. (dig. photo), IBGE n.s., SPF n.s. (dig. photo)], "arvoreta ca. 3 m; casca lisa; folhas cartáceas, face abaxial mais pilosa; frutos carnosos, imaturos cor verde escuro"; – Palmeirante, parcela de monitoramento C6 do empreendimento da Linha de Transmissão LT 500 Kv Colinas/São João do Piauí, 7°53'9" S, 47°55'56" W, savana (cerrado), (fr), 15 Mar. 2010, **E.M. Saddi et al. 367** [RB n.s., W], "árvore; frutos maduros verdes"; – Município de Tupiratins, estrada para Fazenda Água Branca, 8°13.853' S, 48°9.174' W, área de cerrado, (fl male), 27 Oct. 2000, **E.R. Santos et al. 47** [SPF n.s. (dig. photo)], "4 m; cálice e corola brancos"; – Município de Itapiratins, sub-bacia do rio Tocantins, T-1, área 4, pto 4, 207 m, 8°19'27" S, 48°4'49" W, cerrado típico; solo arenoso, (fr), 24 Mar. 2010, **F.C.A. Oliveira et al. 1793** [HUTO n.s. (dig. photo), IBGE n.s., SPF n.s. (dig. photo)], "árvore ca. 3 m, 18 cm DAP; casca gretada cor cinza-escuro; folhas cartáceas, discolores; frutos imaturos cor verde"; – Mun. Presidente Kennedy, road from highway BR-153 to Itaporã, 12 km W of village of Presidente Kennedy, Fazenda Primavera along Ribeirão Feínho, 400–500 m, 8°25' S, 48°37' W, (fr), 1 Feb. 1980, **T. Plowman et al. 8257** [FHO, INPA, MG n.s., NY n.s., W], "tree 4 m × 15 cm diam.; fruit hard, dark green, shiny with pale green punctate dots, subglobose, to 3.5 cm × 4.5 cm diam."; – Município de Guaraí, Sub-bacia do rio Tocantins, T-1, área 7, pto 14, 205 m, 8°37'17" S, 48°9'32" W, cerrado típico e cerrado ralo; solo argilo-pedregoso; pequeno morro, (fr), 25 Mar. 2010, **M.L. Fonseca et al. 6466** [HUTO n.s. (dig. photo), IBGE n.s., SPF n.s. (dig. photo)], "arvoreta ca. 3 m; folhas cartáceas, discolores; frutos imaturos cor verde"; – same data but: pto 13, 205 m, 8°39'28" S, 48°9'36" W, cerrado; solo arenoso com partes encharcadas, (fr), 25 Mar. 2010, **6460** [HUTO n.s. (dig. photo), IBGE n.s., SPF n.s. (dig. photo)], "árvore ca. 4 m, 16 cm DAP; casca soltando placas escuras; folhas cartáceas, discolores; frutos imaturos cor verde"; – Município de Itacajá, sub-bacia do rio Manuel Alves Pequeno, T-13, área 1, pto 8, 291 m, 8°40'33" S, 47°33'49" W, cerrado; solo arenoso, (fr), 27 Mar. 2010, **M.L. Fonseca et al. 6503** [HUTO n.s. (dig. photo), IBGE n.s., SPF n.s. (dig. photo)], "árvore ca. 7 m, 20 cm DAP; casca gretada, escura; folhas cartáceas, discolores; frutos imaturos cor verde"; – Município de Goianorte, bacia do Araguaia, sub-bacia do rio Bananal, A-9, área 3, pto 5, 226 m, 8°48'28" S, 49°4'58" W,

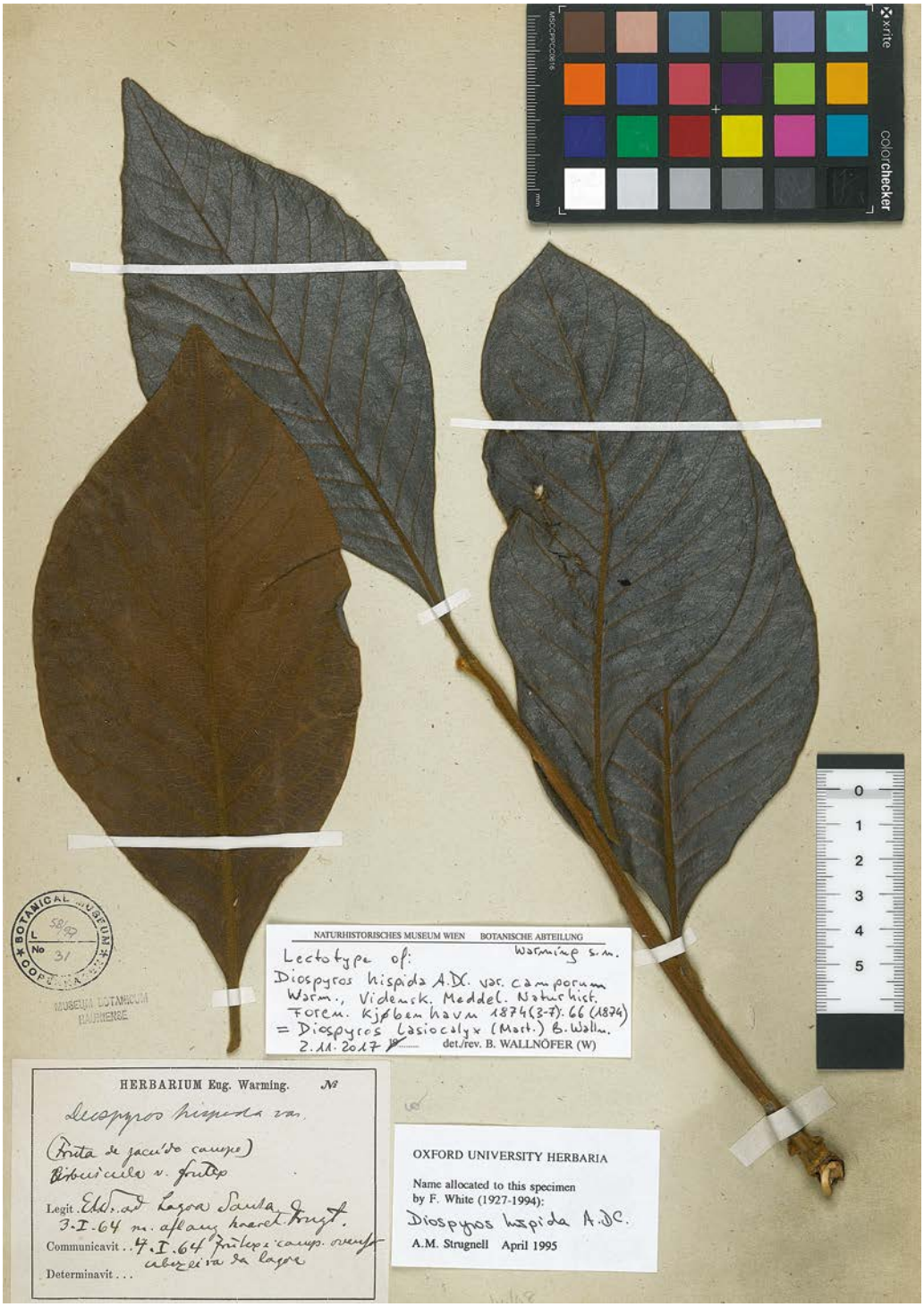


Fig. 12: Lectotype of *Diospyros hispida* var. *camporum* WARM. [C].

cerrado ralo; solo argiloso, (fr), 23 Mar. 2010, **M.L. Fonseca et al. 6421** [HUTO n.s. (dig. photo), IBGE n.s., RB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore ca. 10 m, 45 cm DAP; folhas cartáceas, escuras; frutos imaturos cor verde"; – ca. 2 km S of Guará, 550 m, [8°50' S, 48°30' W], gallery forest and adjacent cerrado, (fr), 19 Mar. 1968, **H.S. Irwin et al. 21456** [F, LIL n.s. (dig. photo), MG n.s., MICH, NY, U, W], "tree ca. 6 m × 8 cm; fruit green"; – 10 km S of Guará, ca. 550 m, [8°55' S, 48°30' W], gallery forest and adjacent cerrado, (fr), 18 Mar. 1968, **21305** [C, COL 2× n.s. (dig. photos), F, K, MG n.s., MO, NY, RB n.s. (dig. photo), US], "tree ca. 6 m × 10 cm; fruit green"; – Município de Bom Jesus [do Tocantins], [ca. 8°58' S, 48°5' W], mata ciliar alterada, (fr), 19 Jan. 2001, **S.F. Lolis et al. 438** [HTO n.s., SPF n.s. (dig. photo)], "arbusto ca. 3 m; frutos imaturos verdes"; – Município de Araguacema [now: Dois Irmãos do Tocantins], bacia do Araguaia, sub-bacia do rio Caiapó, A-7, área 9, pto 7, 207 m, 9°9'20" S, 49°50'54" W, cerrado denso; solo argiloso com serrapilheira, (fr), 21 Mar. 2010, **M.L. Fonseca et al. 6372** [HUTO n.s. (dig. photo), IBGE n.s., RB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore ca. 6 m, 15 cm DAP, abundante; casca escura; folhas cartáceas, discolores; frutos imaturos cor verde"; – same data but: pto 6, 199 m, 9°9'27" S, 49°39'38" W, cerrado típico; solo argiloso pedregoso com serrapilheira, (fr), 21 Mar. 2010, **6356** [HUTO n.s. (dig. photo), IBGE n.s., RB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore heliófita, ca. 3 m, 7 cm DAP, comum; casca estriada, suberosa; folhas cartáceas, discolores; frutos imaturos amarronzados"; – same area: Povoado Santa Clara, A-7, área 9, pto 9, 198 m, 9°9'22" S, 49°37'23" W, cerradão; solo argiloso com serrapilheira, (fr), 21 Mar. 2010, **6384** [HUTO n.s. (dig. photo), IBGE n.s., SPF n.s. (dig. photo)], "árvore ca. 5,5 m, 11 cm DAP; casca estriada, escura; folhas cartáceas, discolores; frutos imaturos cor verde"; – same area: sub-bacia do rio Lageado, Fazenda Nossa Senhora Aparecida (Sr. Iraí), A-8, área 2, pto 5, 183 m, 9°11'11" S, 49°24'22" W, floresta estacional semidecidual aluvial alterada; solo argiloso escuro com serrapilheira, (fr), 22 Mar. 2010, **F.C.A. Oliveira et al. 1736** [HUTO n.s. (dig. photo), IBGE n.s., SPF n.s. (dig. photo)], "árvore ca. 5,5 m, 10 cm DAP; casca lisa, cor cinza; folhas cartáceas, discolores; frutos imaturos cor verde"; – same area: A-7, área 9, pto 8, Povoado Santa Clara, 217 m, 9°11'12" S, 49°8'14" W, mancha de cerradão alterado; solo argiloso escuro com serrapilheira, (fr), 21 Mar. 2010, **M.L. Fonseca et al. 6379** [IBGE n.s., SPF n.s. (dig. photo)], "arbusto ca. 1,5 m, comum; casca fissurada; folhas cartáceas, discolores; frutos imaturos cor verde"; – Município de Caseara, Fazenda Bacaba, 198 m, UTM 22L 613721/8957920 [9°26' S, 49°58' W], cerrado stricto sensu, (fr), 22 Feb. 2009, **E.R. Santos et al. 1770** [HUTO n.s. (dig. photo)], "árvore ca. 3,5 m; frutos jovens verdes"; – Ilha do Bananal, Parque Nacional do Araguaia, caminho para lago do Valdomiro, [ca. 10°25' S, 50°27' W], entre mata de transição e campo de murundum, (defl male), 25 Jun. 1979, **F. C. da Silva et al. 373** [SP, UB], "árvore 3,5 m"; – same area: Município de Lagoa da Confusão, ca. 3 km da Sede, 225 m, 10°27'4" S, 50°28'22" W, mata mesofítica; ecótono cerradão distrófico, (fr), 20 Mar. 1999, **R.C. Mendonça et al. 3928** [IBGE n.s., RB n.s. (dig. photo), U], "árvore ca. 7,5 m, 8 cm DAP; tronco com casca lisa; folhas cartáceas discolor verde; frutos imaturos cor verde"; – same area: near HQ-building, ca. 2 km from Macaúba, ca. 10°30' S, 50°30' W, in cerradão (dystrophic facies), (fl female), 10 Sep. 1980, **J.A. Ratter et al. R4386** [E, K, NY, UEC n.s. (dig. photo)], "tree 4 m tall, 15 cm dbh; foliage newly opened; flowers green"; – same data: in very dense cerradão, (fl male), 15 Sep. 1980, **R4413** [E, K, NY, UEC n.s. (dig. photo)], "tree 5m tall, 15 cm dbh; trunk slanting at about 25°, with a deep squared pattern on the bark; calyx orange-green; corolla pale green but ends of the lobes turning brown with age"; – Município de Pium, bacia do Araguaia, sub-bacia do rio Pium, A-5, área 4c, pto 7, 199 m, 10°27'5" S, 49°7'7" W, mancha de cerradão; solo argiloso, escuro, úmido, com serrapilheira, (fr), 19 Mar. 2010, **F.C.A. Oliveira et al. 1712** [HUTO n.s. (dig. photo), IBGE n.s., SPF n.s. (dig. photo)], "arvoreta 3 m; casca estriada; folhas cartáceas, discolores; frutos imaturos cor verde"; – ca. 27 km S of Paraíso [= Paraíso do Tocantins], ca. 600 m, [ca. 10°24' S, 48°53' W], sandstone outcrops, (fr), 23 Mar. 1968, **H.S. Irwin et al. 21714** [DS, F, MG n.s., NY, P, SP, Z], "tree ca. 8 m × 15 cm; fruits green"; – Palmas, Parque Estadual do Lajeado, parcela 43, [ca. 10°6' S, 48°14' W], cerrado stricto sensu, (fl male), 1999, **E.R. dos Santos et al. 1521** [HTO n.s., VIC n.s. (dig. photo)], "árvore ca. 4,2 m, 51,5 cm perímetro basal"; – Palmas, 675 m, 10°10'12" S, 48°11'24" W, cerrado, (fr), 18 Nov. 2008, **C.W. Fagg et al. 1919** [HUEFS n.s. (dig. photo), IBGE n.s.], "árvore; fruto carnoso cor verde"; – Mun. Palmas, no canteiro central da Avenida Teotônio Segurado, [ca. 10°15' S, 48°20' W], cerrado stricto sensu, (fl male), 15 Nov. 2007, **C.R.S. Anjos & H.V.M. Parente 5** [HUTO n.s. (dig. photo)], "árvore ca. 3 m; apresentam frutos maduros"; – same area: (fr), 15 Apr. 2008, **17** [HUTO n.s. (dig. photo)], "árvore ca. 2 m; frutos amarelos"; – Mun. Palmas, sub-bacia Ribeirão São João, UTM [22L] 0801135/8854307 [10°21' S, 48°15' W], cerrado stricto sensu, antropizado, (fr), 10 Jan. 2006, **E.R. Santos & C. Pereira 205** [HUTO n.s. (dig. photo)], "arvoreta ca. 3 m; frutos imaturos verdes"; – same data but: UTM [22L] 0791867/8847374 [10°25' S, 48°20' W], cerradão, (fr), 21 Oct. 2006, **C.B. Pereira & E.R. Santos 668** [HUTO n.s. (dig. photo)], "árvore ca. 3,5 m; frutos imaturos verdes"; – same data: UTM [22L]

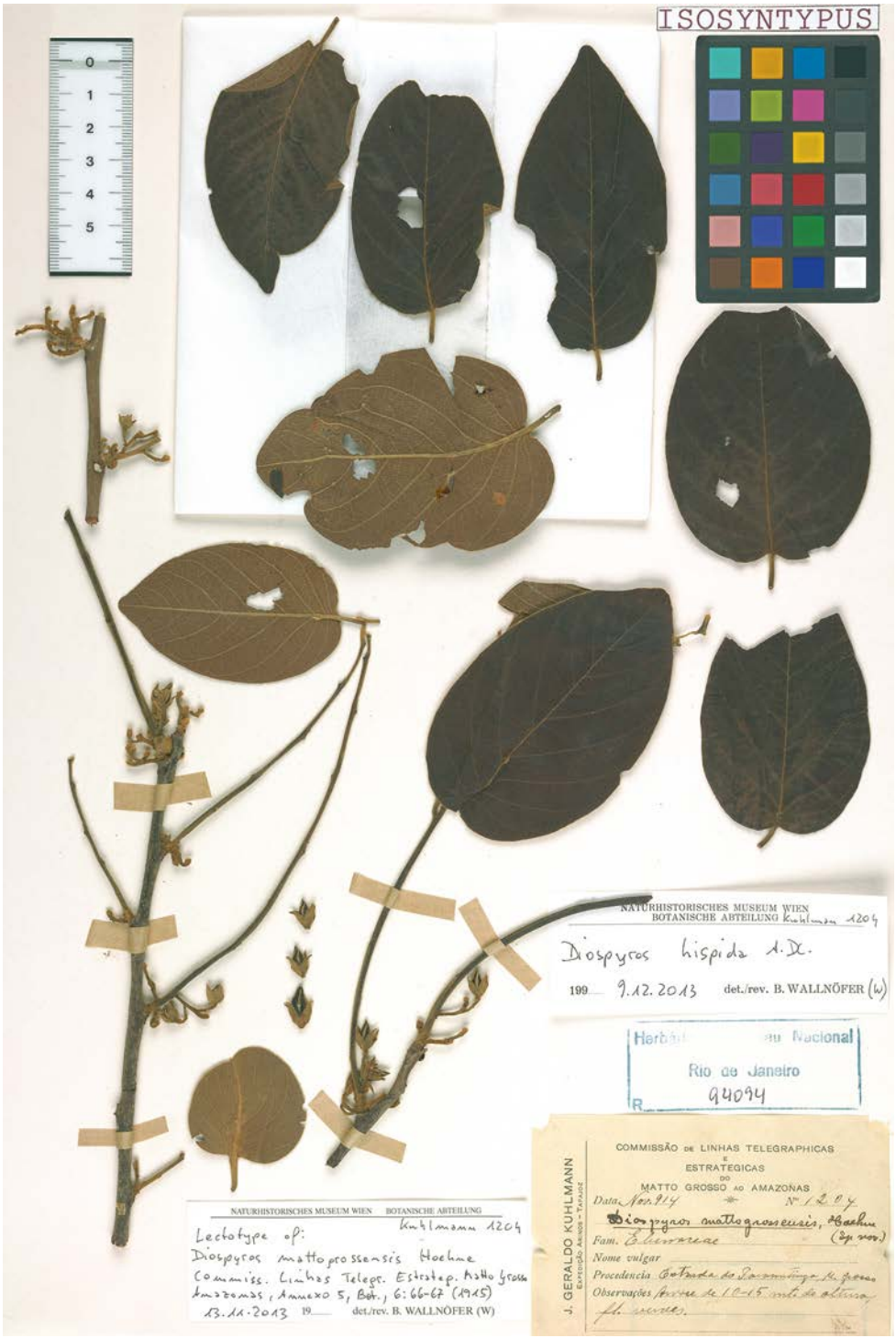


Fig. 13: Lectotype of *Diospyros mattogrossensis* HOEHNE [R].

0795536/8845636 [10°26' S, 48°18' W], mata ciliar, (fl male), 24 Jun. 2006, **582** [HUTO n.s. (dig. photo)], "árvore ca. 6 m; botões florais verde"; – São Felix do Tocantins, arredores da casa do Sr. David Montezuma e Dona Adelice, 463 m, 10º10'34.6" S, 46°32'7" W, cerrado sensu stricto; solo arenoso seco, (fl male), 19 Sep. 2014, **G.M. Antar et al. 516** [CEN n.s. (dig. photo), SPF n.s.], "árvore ca. 3 m; folhas jovens; cálice pardacento; corola esverdeada"; – Ponte Alta do Tocantins, 360 m, 10°42'19" S, 47°29'44" W, cerrado com manchas de campo (predomínio de gramíneas); latossolo avermelhado, arenoso; em topo de morro, (fr), 28 Nov. 2012, **M.L. Fonseca et al. 6589** [HUEFS n.s. (dig. photo), IBGE n.s.. RB n.s. (dig. photo)], "árvore ca. 5 m, 26 cm DAP; folhas cartáceas, discolores, verdes; frutos imaturos com pilosidade marrom"; – same area: 10 km E de Sussuapara [Suçuapara], 386 m, 10°38'22" S, 47°21'18" W, cerrado, (fr), 8 Nov. 2009, **E. Melo et al. 7135** [HUEFS n.s. (dig. photo)], "árvore 3–4 m; folhas coriáceas, discolores; frutos verdes"; – Brejinho de Nazaré, sub-bacia do rio Crixás, T-8, área 2, pto 3, Fazenda Serranópolis, 324 m, 11º1'8" S, 48º44'35" W, cerradão; solo argiloso, (fr), 16 Mar. 2010, **M.L. Fonseca et al. 6282** [IBGE n.s., SPF n.s. (dig. photo)], "árvore ca. 6 m, 12 cm DAP; folhas membranáceas, discolores, pilosas na face abaxial; frutos imaturos cor verde"; – Natividade, Serra de Natividade, sopés da serra 4,2 km da rodovia Natividade/Dianópolis, entrada por Jacuba, em direção à Cachoeira do Paraíso, 345 m, 11°39'23" S, 47°41'28" W, cerrado em solo pedregoso e afloramentos quartzíticos, (fr), 7 Dec. 2003, **R. Mello-Silva et al. 2362** [CEN n.s. (dig. photo), RB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 4 m; folhas discolores, verde-claras na face abaxial; frutos imaturos verdes"; – same area: base da Serra, 294 m, 11º40'1" S, 47º42'40" W, cerrado, (fr), 7 Mar. 2015, **R.C. Forzza et al. 8622** [CEPEC n.s., HTO n.s., RB n.s. (dig. photo), UPCB n.s., W], "árvore 2 m; folhas discolores; frutos verdes"; – Município Dianópolis, 570 m, 11°40'11" S, 46°40'22" W, borda da mata, (fl male), 30 Sep. 2003, **T.B. Cavalcanti et al. 3375** [CEN n.s. (dig. photo), W], "árvore 11 m; sépalas verde-amareladas; flor verde"; – km 21 da estrada Dianópolis/Taguatinga, [ca. 11°44' S, 46°44' W], cerrado em solo arenoso, (yfr), 8 Dec. 1991, **D. Alvarenga et al. 824** [FHO, MG n.s., NY], "subarbusto ca. 0,7 m, frequente; frutos imaturos cor verde, pilosos"; – Figueirópolis, 18 km da cidade, Centro Oeste, 12°15' S, 49°15' W, cerrado sensu stricto, (fr), 12 Nov. 1997, **C. Proença et al. 1828** [UB n.s., UFG n.s. (dig. photos)], "árvore 2 m; casca clara delicadamente fissurada; folhas maiores recurvadas; fruto verde; frutos imaturos arredondados, sulcados com ápice agudo"; – sub-bacia do Rio Palma, 382 m, UTM [23L] 321500/8643844 [12°16' S, 46°38' W], cerrado sobre areia, (fr), 8 Nov. 2008, **R.F. Haidar et al. 1073** [HUTO n.s. (dig. photo)], "árvore ca. 5 m, 25 cm DAP; casca do tronco corticeira e cinza; frutos verdes"; – Município Palmeiropolis, estrada de acesso à balsa do Coronel via fazenda das Palmeiras, km 10, 380 m, 13°2'21" S, 48°17'57" W, cerrado; solo arenoso com alta presença de quartzo leitoso, (fr), 2 Oct. 2007, **G. Pereira-Silva et al. 12176** [CEN n.s. (dig. photo)], "árvore 3 m; fruto imaturos verde"; – Município São Valério do Tocantins [correct is: Paranã], sub-bacia do Tocantins, após Povoado de Custodio, 327 m, 12°59'28" S, 48°7'2.4" W, transição de cerrado sensu stricto com cerrado alto, (yfr), 14 Oct. 2008, **F.C.A. Oliveira et al. 1360** [HUTO n.s. (dig. photo), IBGE n.s., SPF n.s. (dig. photo)], "árvore ca. 3 m, 6 cm DAP; cálice verde-ferrugíneo; frutos imaturos cor verde-ferrugíneo"; – sheet without data [according to HIERN 1873, 249: "between Córrego-fúndo and Pórto-Reál"; the latter is now Porto Nacional], (yfr), Nov. 1828, **W.J. Burchell 8396** [K], "tree 20 ft. high"; – Palmas, Fazenda São João [not located], cerrado, (fr), 10 Jan. 2006, **M. Sobral & J. Larocca 10479** [BHCB n.s. (dig. photo)], "arvoreta 3–4 m; frutos imaturos".

Rondônia, Mun. Porto Velho, Serra do Balateiro a 7 km da Vila Campo Novo, 10°35' S, 63°39' W [correct is probably ca. 10°35' S, 63°41' W], mata de terra firme, solo areno-pedregoso com afloramentos rochosos, (fr), 24 Apr. 1987, **C.A.C. Ferreira et al. 8919** [NY n.s., W], "árvore 15 m × 30 cm de diam.; frutos quando imaturos verdes e quando maduros amarelos"; – Chupinguaia, [ca. 12°33' S, 60°54' W], (st), 22 Dec. 1996, **G. Prestes DRL 2212-120-1996** [RON n.s. (dig. photo)]; – Vilhena, arredores do Aeroporto, [12°44' S, 60°8' W], campo cerrado, (fr), 30 Jan. 1979, **M.G. Silva & A. Pinheiro 4369** [MG n.s., UEC], "árvore 3 m; fruto imaturo verde"; – road Vilhena to Colorado 20 km from Vilhena (12 km from BR-364), 12°50' S, 60°10' W, edge of savanna, (yfr), 26 Oct. 1979, **J.L. Zarucchi et al. 2803** [GH n.s., INPA, K, MG n.s., MO, NY, RB n.s. (dig. photo)], "tree 5 m × 25 cm, contorted; fruits green"; – Corumbiara, [ca. 13°0' S, 60°57' W], (st), 21 Dec. 1996, **H.S. Pereira & C.R. Souza 2112-011-1996** [RON n.s. (dig. photo)].

Mato Grosso, Vila Rica, nos arredores de Veranópolis, floresta junto à BR-158, UTM [22L] 493677/8914408 [9°49' S, 51°3' W], em interior de resto de floresta, (fl male), Oct. 2005, **M. Sobral et al. 10076** [BHCB n.s. (dig. photo)], "arvoreta 4 m; flores creme"; – Mun. de Santa Terezinha, Faz. União, a 5 km da cidade, 10°40' S, 50°35' W, [correct seems to be: 10°28' S, 50°31' W], cerrado; solo arenoso, (fl male), 10 Oct. 1985, **C.A.C. Ferreira et al. 6387** [FHO, INPA, K, MG n.s., NY, SPF], "arvoreta 8 m; flores e botões esverdeados"; – Ilha do Bananal, na divisa com o Parque Nacional do Araguaia, coletas no Parque Indígena, 10°25' S,

Fig. 14: Lectotype of *Diospyros coccolobifolia* var. *pubescens* HOEHNE [R].

50°30' W [correct seems to be: ca. 10°40' S, 50°40' W], cerrado de pedras, (fl male), 11 Oct. 1985, **J.R. Pirani et al. 1228** [FHO, HFSL n.s., INPA, MG n.s., MO n.s., NY n.s. (dig. photo), SPF n.s. (dig. photo), W 2×], "arvoreta 4 m; flores com corola verde; estames creme; ovário verde com estigma viscoso amarelado"; – Colíder, resgate da flora da UHE Colíder, lote B de supressão, 271 m, 21L 650912/8789964 [10°57' S, 55°37' W], floresta do "Planalto dos Parecís"; região de ecótono entre a floresta amazônica e cerrado; encontrado em mata secundária e solo seco, (fr), 27 Jan. 2015, **L.F. Sardelli et al. 3228** [RB n.s. (dig. photo)], "arbusto; folhas concolores, coriáceas; frutos carnosos, imaturos, verdes, ovais"; – same data but: Itaúba, lote F de supressão, 276 m, 21L 0660655/8777224 [11°3' S, 55°32' W], (fr), 22 Apr. 2015, **A.Z. Bronholi et al. 6849** [RB n.s. (dig. photo)], "árvore 2,3 m, CAP 35 cm; base reta; casca áspera, morta cinza, viva alaranjado; alburno cor creme; folhas discolores, verdes; frutos imaturos verdes, esféricos, cheiro de goiaba"; – 11°15' S, 50°54' W [W Luciára], (fr), 24 Nov. 1977, **C.T. Falção 5082** [RB n.s. (dig. photo)], "árvore 5 m; frutos verdes"; – Alto Boa Vista, [ca. 11°40' S, 51°23' W], cerrado, (st), 13 Aug. 1997, **L.C. Bernacci 2432** [ESA n.s. (dig. photo)], "árvore ca. 8 m; folhas em brotação"; – Mun. de Nobres, BR-163, a 125 km ao S de Sinop, 10 km de Primavera, 12°55' S, 55°53' W, cerrado; solo arenoso, (fl female), 18 Sep. 1985, **C.A.C. Ferreira et al. 6096** [FHO, INPA, K, MG n.s., NY, SPF], "arbusto 5 m; flores e botões esverdeados"; – Município Gaúcha do Norte, estrada Gaúcha do Norte/Paranatinga, 13°1'34" S, 53°10'21" W [incorrect?], mata de galeria, (fr), 28 Mar. 1997, **F.R. Dario et al. 1104** [ESA n.s. (dig. photo), UFMT n.s. (dig. photo), W], "árvore de 4 m; frutos verde"; – ca. 1 km NE Garapú, 300–400 m, 13°12' S, 52°34' W, margin of gallery forest, bordering on burned-over savanna, (fl male), 1 Oct. 1964, **H.S. Irwin & T.R. Soderstrom 6526b** [MG n.s., NY n.s., W], "tree 4 m × 6 cm"; – ca. 10 km S of Garapú, 300–400 m, 13°12' S, 52°34' W, cerrado, (fl male), 3 Oct. 1964, **6617** [FHO, MG n.s., NY], "tree 5 m × 10 cm; flowers pale green"; – between km 244 & 264 Xavantina/Cachimbo road (expedition Base Camp, 12°49' S, 51°46' W), cerrado, (fr), 12 Dec. 1967, **D. Philcox et al. 3469** [K, NY, P, U, UB], "tree 5 m; unripe fruits green"; – same area and Camp: ca. 2 km E of km 256, (fr), 24 Jan. 1968, **D. Philcox & A. Fereira 4178** [K, NY, P, U, UB], "tree c. 3 m; fruits greenish-brown"; – same area: E of Base Camp, (fr), 1 Mar. 1968, **4395** [E, K, NY, P, RB n.s. (dig. photo), U, UB], "tree 3–4 m tall; young fruits dark green"; – same Camp: R 30, ca. 3 km W of base camp, cerrado, (fl male, yfr), 23 Sep. 1968, **R.M. Harley & R. Souza 10209** [K, NY, P], "pachycaul shrub 2 m with tumid grey stems; leaves mid green with slight rusty tomentum; flowers pointing downwards, yellow green"; – same area: ca. 6 km due S of base camp, (fr), 10 Oct. 1968, **R.M. Harley et al. 10576** [AAU, FHO, K, L, NY, U, UB, UC], "small corky tree 4 m; young shoots with rusty tomentum; leaves bright green above with paler under surface; fruit green immature"; – same area: near base camp, cerrado, (fr), 5 Dec. 1968, **R.M. Harley & R. de Castro 11298** [K, NY, P, UB], "tree 4 m; leaves glossy mid green slightly rugose above, with yellowish hairs beneath; fruit spherical"; – Serra do Roncador, Mun. de Barra do Garças, 260 km along new road NNE of village of Xavantina (ca. 3 km due SE of Royal Society/Royal Geographic Society Base Camp. Base Camp is at 12°51' S, 51°45' W) [MO label: "This spot is now ca. 16 km NE of center of the city of Ribeirão Cascalheira. The village of Xavantina is now the city of Nova Xavantina"], along path R3, ca. 450 m, tree & scrub woodland cerrado, (fl male), 10 Oct. 1968, **G. Eiten & L.T. Eiten 9211** [B, K, MO, NY, SP, TUR, US], "tree 5 m, trunk 13 cm dbh"; – same data: (fl female), **9214** [US], "shrub"; – same area and collectors: 1.6 km due SSW of Royal Society Base Camp, 1.6 km S along main road from turnoff to Base Camp, (in Stand 5), 450 m, (fr), 29 Nov. 1969, **9632** [SP n.s., US], "shrub with green fruit"; – Xavantina, arredores do acampamento da expedição inglesa até o córrego do Surucucu [K: "Surucuri"], [12°51' S, 51°45' W], cerrado, (fl male), 10 Oct. 1968, **S.G. Fonsêca & E. Onishi 1318** [K, MG n.s., RB n.s. (dig. photo), UB, W], "árvore 4 m; flores esverdeadas"; – same data: (yfr), **1360** [MG n.s., RB n.s. (dig. photo), UB], "árvore ± 3 m; diam. na base ± 12 cm; frutos e plantas com pelos dourados"; – same area: arredores do acampamento, 12°54' S, 51°52' W, cerrado arenoso e seco, (fr), 6 Feb. 1969, **E. Onishi et al. 889** [UB], "árvore 3 m; fruto verde"; – 8 km NE of the Base Camp of the Expedition (Base Camp at 12°54' S, 51°52' W close to the Xavantina/São Felix road), growing in tall valley forest close to a small river, (st female), 11 Apr. 1968, **J.A. Ratter et al. R986** [FHO, K, LE n.s., NY, U], "tree 36 m tall; trunk 150 cm in girth 1 m above ground level, no buttresses"; – same data but: 8 km S of the Base Camp, in cerrado vegetation with trees to 6 m tall, on a laterite-capped knoll, (fr), 10 Jul. 1968, **J.A. Ratter et al. R2126** [E, UB], "small tree 4 m tall; trunk 8 cm dbh"; – Município de Ribeirão Cascalheira, Barreira Amarela, próximo ao ponto 09, [12°34' S, 50°59' W], cerrado sensu stricto; solo LVA / LVE, (yfr), 13 Oct. 2003, **C. Fernandes-Bulhão et al. CFB 288** [NX n.s. (dig. photo), W], "árvore ca. 4,5 m; casca grossa com placas irregulares; entrecasca fortemente avermelhada; frutos jovens verdes"; – same Município: Fazenda Marruá, 12°39'44.6" S, 51°5'8.8" W, cerrado sensu stricto, (defl female, yfr), 7 Oct. 2003, **B.S. Marimon et al. BS-693** [NX n.s. (dig. photo)], "arbusto 2,6 m, comum; casca com placas rígidas; entre-casca preta; frutos verdes";

Fig. 15: *Diospyros lasiocalyx* from the Reserva Biológica de Pedra Talhada (9°15' S, 36°25' W), Alagoas, Brazil (28 Oct. 2014, Nusbaumer 4253): a: trunk; b: buds; c: fruit and leaves; d: fruit; e: calyces of two fruits; – all photos: courtesy of Louis Nusbaumer.

– Município de Pontes e Lacerda, Mina de São Vicente, [14°32' S, 59°47' W], margem de estrada em área degradada de cerrado, (fr), 31 Jan. 1995, **O. Ettori Jr. 7** [ESA n.s. (dig. photo), W], "árvore 4 m; troncos retorcidos; casca grossa; frutos verdes"; – Vila Bela da Santíssima Trindade, sítio próximo à Baía do Arrozal, 4 km NE de Vila Bela, [14°59' S, 59°55' W], indivíduo remanescente em pastagem, (fr), 25 Mar. 2014, **M.F. Simon et al. 2350** [CEN n.s. (dig. photo), RB n.s. (dig. photo)], "árvore 8 m, bastante ramificada; frutos imaturos"; – Mun. Pontes e Lacerda, rodovia BR-174, entre km 207–209, [ca. 15°13' S, 59°20' W], floresta, (fl male), 8 Nov. 1996, **G. Hatschbach et al. 65432** [MBM], "árvore 20 m"; – Mun. Jauru, rodovia MT-248, km 18 de Jauru para Figueirópolis do Oeste, [15°27' S, 58°45' W], mata de galeria, (fr), 8 May 1995, **G. Hatschbach et al. 62471** [HBG, MA, MBM, US, Z], "árvore 5 m; fruto amarelo"; – rodovia MT-170, ramal W a 3 km N do cruzamento com a BR-364 (tr 3), Fazenda Itamarati, 14°20' S, 58°2' W [incorrect?], savana bem drenada, solo arenoso, (st), 14 Feb. 1994, **T.M. Sanaiotti 411** [E]; – same data: (fr), 16 Feb. 1994, **435** [E], "árvore 1,6 m; fruto imaturo verde, maduro laranja"; – divisa dos municípios de Tangará da Serra e Nova Olímpia, [ca. 14°40' S, 57°18' W], cerrado perturbado, latossolo vermelho, (fr), 15 Dec. 1993, **M. Macêdo & R. Gudinho 3570** [INPA n.s. (dig. photo)], "árvore 3 m; folhas alternas pilosa; fruto imaturo"; – Diamantino, Fazenda Iguaçu ("Pequeno Figueiredo"), entrada na rodovia BR-364, [ca. 14°23' S, 56°23' W], cerrado, (fl female), 24 Aug. 2008, **M.F. Santos et al. 373** [RB n.s. (dig. photo), SP n.s., SPF n.s. (dig. photo)], "arvoreta 1 m; caule suberoso; cálice e corola esverdeados; frutos coletados do chão"; – same data but: cerrado em alto de morro; solo pedregoso, (fl male), 26 Aug. 2008, **378** [NY n.s. (dig. photo), RB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 2 m; tronco curto; ramos pensos; pilosidade alva; catáfilos ocres; cálice esverdeado no botão floral"; – Rosário Oeste, SESC Serra Azul, antiga Fazenda Santo Antonio, matas da trilha para a cachoeira da Serra Azul, 343 m, 14º29'44" S, 55º42'20" W, matas secas, (fr), 26 May 2015, **G. Martinelli et al. 18509** [CEN n.s., RB n.s. (dig. photo), W], "arvoreta 5 m, heliófila; folhas verdes, marcadamente discolores; frutos maduros de cor amarelo"; – ca. 29 km de Marzagão em direção a Planalto da Serra, 14°41' S, 55°27' W, savana arborizada (cerrado) sobre solo pedregoso, (fl female, yfr), 7 Oct. 1997, **V.C. Souza et al. 20296** [ESA n.s. (dig. photo), RB n.s. (dig. photo), UFMT n.s. (dig. photo), W], "arbusto ca. 2 m; frutos imaturos verdes"; – Município de Nova Xavantina, Fazenda da Serra, Córrego Lagedo, comunidade Cachoeira, 14°32' S, 52°26' W, (fr), 5 Nov. 1999, **E.S. Lima ES-390** [NX n.s. (dig. photo)], "árvore 5,5 m, DAP 20 cm; caule com fissuras longitudinais; frutos verdes"; – Campus Universitário da UNEMAT, Estação Biológica Mário Viana, fim da trilha do Pequi, [14°42' S, 52°21' W], cerrado, (yfr), 25. Sep. 1999, **R.H.O. Viana 214** [NX n.s., W], "arvoreta 2 m; casca suberosa; cálice esverdeado; fruto imaturo verde"; – Município Barra do Garças, Distrito de Indianópolis, Fazenda Brasil (divisa com Fazenda Roncador), 15°5'35" S, 52°25'82?" W, savana florestada (cerrado), (fr), 20 Mar. 1997, **G.F. Árbocz et al. 3496** [ESA n.s. (dig. photo), RB n.s. (dig. photo), UFMT n.s. (dig. photo), W], "árvore 4 m; frutos imaturos verdes"; – Serra do Taquaral, 15°41' S, 52°20' W, mata em grotão, em limite com cerrado, (fr), 24 Nov. 1997, **L.C. Bernacci & G.F. Árbocz 2587** [ESA n.s., IAC, W], "árvore ca. 10 m; frutos imaturos, verde-ocraceos"; – Acorizal, rodovia MT-010, entre Acorizal, ca. 7 km após a entrada de Acorizal, 220 m, 15°1'51" S, 56°21'44" W, cerrado com mata ciliar, (fr), 20 Apr. 2005, **L.P. de Queiroz et al. 10501** [HUEFS n.s. (dig. photo)], "árvore ca. 3,5 m; folhas cartáceas; frutos alaranjados"; – Mt. Acorizal, [15°12' S, 56°22' W], (fr), 20 Nov. 1995, **G.G. Neto et al. 1439** [INPA], "arbusto 3 m; frutos pilosos"; – Município Chapada dos Guimarães, Fazenda Morro da Laje, 15°19'37" S, 55°44'42" W, interior do cerrado, (fr), 26 Feb. 1997, **A.G. Nave et al. 1262** [ESA n.s. (dig. photo)]; – Chapada Guimarães, KM 14 rodovia MT-305, [according to OLIVEIRA FILHO & MARTINS (1986): 15°21' S, 55°49' W, 350–680 m], cerrado, (fr), 4 Nov. 1984, **A.T. de Oliveira Filho 231** [E, UEC, UFMT n.s. (dig. photo)], "árvore ca. 4 m; fruto verde ferrugíneo"; – Chapada dos Guimarães, cerradão behind Colégio de Buriti, 720 m, [15°23' S, 55°50' W], cerradão, (fl male), 12 Oct. 1973, **G.T. Prance et al. 18878** [G, INPA n.s. (dig. photo), K, MG n.s., MO, NY, R, S, U, US], "tree 2 m tall; corolla green"; – Cuiabá, Coxipó, ca. 10 km depois da Chácara Roselândia, [not located, ca. 15°28' S, 55°59' W], cerrado; solo argilo-arenoso, (fl male), 18 Oct. 1983, **Saddi et al. 3375** [RB n.s. (dig. photo)], "subarbusto ca. 1,2 m, frequente; flores esverdeadas"; – estrada Cuiabá/Chapada dos Guimarães, a 12 km de Chapada dos Guimarães, ca. 630 m, [15°27' S, 55°52' W], cerrado, (fr), 21 Mar. 1981, **J. Jangoux & A. Sebastião 1414** [INPA, MG n.s.], "arbusto 2 m; fruto imaturo verde escuro"; – Santa Anna da Chapada, [15°26' S, 55°45' W], in cerrados et in campis, (fl male), 1 Oct. 1902, **G.O.A. Malme 2428** [S 2×], "frutex vix 1 m altus"; – same area and collector: (fl female), 3 Oct. 1902, **2428a** [S]; – same data: **s.n.** [S]; – same area and collector: in campo arboribus raris obsito, (fl), 18 Sep. 1902, **s.n.** [S]; – Município Chapada dos Guimarães, PARNA [= parque nacional], Fazenda Pombal, [ca. 15°28' S, 55°45' W], (fr), 19 Nov. 1999, **L.A. Neto et al. 987** [UFMT n.s. (dig. photo)], "arbusto ca. 2,5 m; fruto pubescente, esverdeado, imaturo"; – same area: cerrado, in burned over area, (fl male), 17 Sep. 1979, **G.M. Christenson et al. 1176** [CEN,

MBM n.s. (dig. photo), US], "small tree to 8'; flowers green"; – Faz. 20 de Dezembro, [ca. 15°28' S, 55°45' W], orla de mata, (fl male), 9 Nov. 1983, **J.R.B. Monteiro et al. 42** [UEC, UFMT n.s. (dig. photo)], "árvore ca. 12 m; caule liso; ramos jovens pilosos; corola verde"; – Rancho Paredão da Serra, 15°29'7" S, 55°42'98?" W, mata de encosta; interior da mata, (fr), 24 Feb. 1997, **A.G. Nave et al. 1218** [ESA n.s. (dig. photo), UEC, UFMT n.s. (dig. photo)], "árvore 18 m; fruto verde"; – Chapada dos Guimarães, 15°30' S, 55°28' W, campo cerrado, (st), 21 Mar. 1978, **M.S. Sillman 121** [RB n.s. (dig. photo)], "arvoreta 1,6 m; 27 cm de circunferência do fuste; folhas coriáceas e brilhantes"; – same data: (fr), 23 Mar. 1978, **130** [RB n.s. (dig. photo)], "arbusto 1,3 m; 16 cm de circunferência do fuste; caule com casca preta, muito espessa; frutos castanho esverdeados"; – [near Cuiabá], 15°32' S, 56°8' W, (fr), 10 Nov. 1977, **J.M. Lemes 4067** [RB n.s. (dig. photo)], "árvore 3 m; folhas pilosas, verde escuro na face superior e verde claro na face inferior; frutos verdes e carnosos"; – Cuiabá, Universidade Federal do Mato Grosso, Instituto Linguístico, [ca. 15°35' S, 56°5' W], solo areno-pedregoso, (fr), 20 Aug. 1988, **M. Macêdo & S.P. Assumpção 2052** [INPA n.s. (dig. photo)], "arvoreta 3 m; frutos imaturos verdes"; – same data: (fr), 22 Feb. 1990, **2465** [INPA 2× (+ dig. photo)], "árvore 6 m; fruto verde imaturo"; – same data: (fr), 7 Mar. 1990, **2486** [INPA n.s. (dig. photo)], "árvore 6 m; baga imaturo"; – Cuyabá [= Cuiabá], [ca. 15°35' S, 56°5' W], in silva minus densa, (fl male), 11 Dec. 1893, **G.O.A. Malme 1210** [S 2×], "arbor ad 10 m alta; trunco ± recto, ramis erecto-patentibus; cortice laevigato; flores virides"; – same area and collector: cerrado; loco sicco glareoso, (st), 17 Jun. 1902, **s.n.** [S 4×], "arbuscula circ. 2 m alta"; – same area and collector: (st), 19 Jun. 1902, **s.n.** [S]; – same area and collector: cerrado, (fr), 22 Nov. 1893, **1132** [S 2×, UPS], "arbor 3–4 m; trunco ramisque crassis flexuosis; cortice crasso rimoso"; – same area: in camp. siccis, (fl male), Sep. 1807, **G.H. Langsdorff s.n.** [LE n.s., NY], "arbor 12–20 ped.; flores virides"; – same area: in campis siccis, (fl male), Sep. 1824, **L. Riedel 1182** [NY 4×], "arbor 12–20 ped.; cal. 4–5 part.; cor. viride"; – entroncamento das rodovias Cuiabá Santarém e Porto Velho, arredores do aeroporto, [15°39' S, 56°7' W], campo cerrado, (fl male), 8 Feb. 1979, **M.G. Silva & A. Pinheiro 4513** [MG n.s., NY], "árvore 3 m; flor creme"; – Cuiabá, N. Sra. do Livramento, Fazenda Moqueiu, [ca. 15°46' S, 56°21' W], cerrado; dry clay sandy soil, (fr), 25 Oct. 1979, **M. Macedo et al. 1439** [NY], "tree; unripe fruit green"; – estrada Ranchão da Lagoa/Engenho Velho (Cuiabá), margem esquerda, [ca. 15°47' S, 56°8' W], capoeira; solo argiloso, (yfr), 22 Nov. 1976, **M. Macedo et al. 311** [INPA], "arbusto 1 m, abundante; casca lisa; folhas verdes; flor branca, aromáticas"; – Cuiabá, lado direito da estrada do Ranchão da Lagoa, próximo ao entroncamento da Varginha, [ca. 15°49' S, 56°6' W], cerrado; solo argilo-pedregoso (capoeira) sêco, (fr), 30 Mar. 1977, **M. Macêdo et al. 638** [INPA], "árvore pouco frequente; fruto amarelo"; – Santo Antonio Leverger, Fazenda Matão, [ca. 15°52' S, 56°4' W], mata; solo arenoso, (st), 12 Apr. 1996, **M. Macedo & R. Godinho 4623** [UFMT n.s. (dig. photo)], "arvoreta ca. 3 m; frutos amarelos maduros"; – Município Cáceres, BR-070, Fazenda São Domingos, 16°21'33.4" S, 58°18'31.5" W, cerrado stricto senso, (yfr), 29 Sep. 2011, **F.F. Morais & R. Monteiro 382** [HRCB n.s., RON n.s. (dig. photo)], "arbórea 4 m; súber espeço, estrias longas e largas; caule cor de vinho"; – Pantanal de Poconé, estrada Poconé/Boqueirão, cerca de 9 km de Poconé após o Rio Saracura, [ca. 16°18' S, 56°41' W], (fl male), 15 Sep. 1988, **A.L. Prado & G.G. Neto 124** [UFMT 2× n.s. (dig. photos)], "arbusto 3 m"; – rodovia Poconé/Porto Cercado, [ca. 16°23' S, 56°27' W], cerrado; solo arenoso, (defl female), 23 Oct. 1997, **N.C. Cunha et al. 3305** [UFMT n.s. (dig. photo)], "árvore 6 m"; – Pantanal de Poconé, estrada Poconé/Porto Cercado, cerca de 25 km após o Rio Bento Gomes, [ca. 16°23' S, 56°27' W], margem de estrada, (fr), 27 May 1988, **s.coll. 65** [UFMT n.s. (dig. photo)], "arbusto ca. 4 m; frutos globosos, verdes quando jovens, amarelos quando maduros"; – Sesc Pantanal, [16°30' S, 56°25' W], campo em regeneração, (fr), 4 Apr. 2004, **H.B. Nogueira et al. 293** [UFMT n.s. (dig. photo)], "árvore 3,5 m; frutos amarelos; polpa branca sem odor"; – Barão de Melgaço, RPPN SESC Pantanal, [ca. 16°28' S, 56°10' W], (fr), Jul. 2008, **J. Kuntz-Galvão et al. 102** [ESA n.s., RB n.s. (dig. photo), W], "árvore ca. 6 m; frutos verdes"; – rodovia Rondonópolis/Poxoréu, km 75, [ca. 16°11' S, 54°29' W], cerrado; solo arenoso, (fl male, yfr), 29 Oct. 1976, **M. Macêdo et al. 542** [INPA n.s. (dig. photo)], "arbusto 60 cm, pouco frequente; casca lisa; frutos sucosos"; – 6 km from Rondonópolis on the road to Cuiabá, ca. 16°29' S, 54°37' W [correct seems to be: 16°26' S, 54°42' W], in the margin of a cabeceira of mesotrophic facies cerradão, (fr), 4 Nov. 1993, **J.A. Ratter et al. R6945** [E], "shrub 2 m tall"; – Alto Garca [= Garças], 450 km past Cuiaba en route to Goiania, 830 m, [ca. 16°56' S, 53°32' W], cerrado, (fl male), 30 Sep. 1963, **B. Maguire et al. 56940** [FHO, MG n.s., NY], "tree 1.5–2 m; flowers cream-white"; – Alto Araquaia/Rondonópolis, BR-364, 17°10' S, 52°55' W [correct is probably 17°10' S, 53°24' W], (yfr), 26 Oct. 1977, **J. da S. Costa 98** [RB n.s. (dig. photo)], "arbusto ca. 2 m; folhas coriáceas"; – 20 km past Alto Araguaia en route to Alto Garças, 830 m, [ca. 17°13' S, 53°20' W], frequent in cerrado, (fl female), 30 Sep. 1963, **B. Maguire et al. 56956** [FHO, MG n.s., NY, US], "female tree 5 m high, 15 cm diam.; bark corky; calyx greenish; corolla sericeous toward apex inside"; – Município de Nova Xavantina, Fazenda Boa

Esperança [not located], transecto área 01 (reconstituição), cerrado, (fr), 9 Jan. 1997, **E.S. Lima 21** [NX n.s. (dig. photo)]; – same Município: Fazenda de Rosalino Mocelin [not located], cerrado senso-estrito; latossolo amarelo avermelhado, (fr), 5 Feb. 2001, **M.R. Scapin 6** [NX n.s. (dig. photo)]; – Município Região de Cocalinho, (fr), 1997, **A. Rozza et al. 483** [ESA n.s. (dig. photo), UFMT n.s. (dig. photo), W]; – região entre Barra do Garças e Campinópolis, ponto 4, (fr), 19 Feb. 1997, **G.F. Árbocz et al. 3260** [ESA n.s. (dig. photo)], "árvore 5 m; frutos imaturos verdes"; – without data, (fl male), s.d., **H. Smith 161** [R].

Goiás, Mun. Campos Belos, estrada de chão para Pouso Alto, 600 m, 13°1'2" S, 46°22'19" W, mata estacional semi-decidual; solo argiloso/arenoso próximo à afloramento de calcáreo, (fr), 24 Apr. 2001, **M.L. Fonseca et al. 2555** [CEN n.s. (dig. photo), IBGE n.s., RB n.s. (dig. photo), U], "árvore heliofita ca. 8 m, 25 cm DAP, comum; folhas discolores, verdes, cartáceas; fruto imaturos cor verde, maduros amarelos, pilosos"; – Município Cavalcante, estrada de terra que parte do "Porto dos Paulistas" (no rio Tocantins) para o HU/ Curral de Pedra, à cerca de 1,8 km do rio, área de influência da Hidrelétrica Cana Brava, 410 m, 13°29'13" S, 48°8'16" W, cerrado sentido restrito (típico); latossolo vermelho com muito afloramento de cascalho, (fr), 9 Nov. 2000, **B.M.T. Walter et al. 4678** [CEN n.s. (dig. photo), W], "árvore 3,5 m; frutos imaturos verdes"; – Município de Minaçu, Reserva da Serra da Cana Brava, perto da antena de TV (centro oeste), [ca. 13°32' S, 48°15' W], cerrado aberto, (st), 10 Jun. 1995, **C. Proenca et al. 1280** [UB], "árvore 5 m, bastante ramificada"; – 55 km S of Porangatú on the Brasília/Belém highway (BR-153), 13°50' S, 49°3' W, 500 m, in campo cerrado, (st), 15 Nov. 1997, **J.A. Ratter et al. R7986** [UB n.s., UFG n.s. (dig. photo)], "tree with seven trunks arising from an area 2.5 m across (presumably coppice regeneration), forming a wide-crowned clump, 6 m tall; thickest trunk 20 cm dbh, with very pale fawn bark cracking and fissuring in a wavy pattern"; – Mun. Campinaçu, estrada de acesso as fazendas Praia Grande e Palmeiras do Maranhão, antiga estrada de Garimpo, [ca. 13°47' S, 48°34' W], cerrado; substrato areno-pedregoso; na mata seca, (fl male), 9 Oct. 1995, **T.B. Cavalcanti et al. 1899** [CEN n.s. (dig. photo), NY n.s. (dig. photo), W], "árvore 5 m; botões verdes; flor verde"; – Mun. Minaçu, margem esquerda do lago do AHE Serra da Mesa, próximo a barragem, [13°49' S, 48°18' W], mata ciliar, (fr), 27 Jan. 1998, **S.P.C. da Silva et al. 736** [CEN], "fruto imaturo verde"; – same data: cerrado sensu-stricto, **737** [CEN], "arvore; fruto imaturo verde"; – Mun. Colinas do Sul, abaixo da linha de transmissão que liga Niquelândia a Serra da Mesa, entrada 2 km da entrada sul do canteiro, bacia de inundação (UHE [Usina Hidrelétrica] Serra da Mesa), córrego afluente do rio Tocantins, 360 m, 13°50' S, 48°18' W, mata de galeria (segmento I da bacia de inundação); solo areno-argiloso com forte camada de serrapilheira, (fr), 12 Dec. 1991, **B.M.T. Walter et al. 1015** [CEN, FHO], "árvore 14 m, 19 cm DAP; folhas discolores; indumento sérico dourado; fruto imaturo verde"; – 2 km da entrada sul do canteiro de obras, estrada da UHE Serra da Mesa/Colinas do Sul, bacia de inundação da UHE [Usina Hidrelétrica] Serra da Mesa, 390 m, 13°53' S, 48°18' W, mata de galeria; um pouco alterada; event. sujeita a fogo; solo arenoso a areno-argiloso, (fr), 9 Dec. 1991, **B.M.T. Walter et al. 934** [CEN n.s. (dig. photo), FHO, W 2×], "árvore 12 m, 18 cm DAP; fruto imaturo verde"; – Mun. Niquelândia, Vale do rio Tocantinzinho, Reservatório em formação do AHE da Serra da Mesa, 440 m, 13°57' S, 48°16' W, mata ciliar do rio Tocantinzinho; substrato: pouco solo areno-argiloso com afloramentos rochosos, (fr), 27 Jan. 1998, **B.M.T. Walter et al. 4023** [CEN], "arvore; apenas a copa fora d'água; frutos imaturos verdes"; – estrada de terra entre Guarani de Goiás e São Domingos, antes da entrada do Parque de Terra Ronca, [ca. 13°43' S, 46°21' W], (fl male), 23 Sep. 2011, **J.F.B. Pastore & H. Moreira 3328** [HUEFS n.s. (dig. photo)], "árvore 4 m; flores verdes"; – Município Niquelândia, Rio Traíras, margem esquerda, área de influência da UHE Serra da Mesa, [ca. 14°9' S, 48°26' W], ambiente antropizado; solo areno-pedregoso (com afloramento rochoso), (fr), 27 Apr. 1999, **S.M. Verboonen et al. 83** [CEN n.s. (dig. photo)], "árvore ca. 3,5 m, comum; folha: face abaxial verde escura, face adaxial verde clara e pilosa; estames creme; botão floral verde e piloso; frutos imaturos verdes"; – Município de Colinas do Sul, estrada próxima à RPPN Cachoeira das Pedras Bonitas (RPPN 01), Córrego Água Doce, 455 m, ca. 14°11'41.4" S, 48°3'22.4" W, mata de galeria; solo areno/pedregoso, (fr), 21 May 2004, **M.L. Fonseca et al. 5400** [IBGE n.s., RB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore heliófita ca. 7 m, 0,13 m DAP, comum; folhas cartáceas, abaxial pilosa; frutos imaturos cor verde, pilosos"; – Alto Paraíso de Goiás, Parque Nacional da Chapada dos Veadeiros, São Jorge, trilha dos Saltos, 981 m, 14º10'8" S, 47º49'34" W, cerrado rupestre; solo pedregoso; área com históricos de mineração e incêndios, (fr), 24 Nov. 2014, **M. Verdi et al. 7249** [RB n.s. (dig. photo)], "árvore 3 m, pouco frequente; folhas e frutos imaturos verdes"; – same Parque: GO-239, 23,6 km da GO-118, 14.1357º S, 47.7138º W [14°8' S, 47°43' W], cerrado, (fl male), 4 Oct. 2007, **J. Paula-Souza et al. 8892** [CTES n.s., SI n.s., SPF n.s. (dig. photo)], "arvoreta ca. 4 m; flores verdes"; – km 17.4 da rodovia Alto Paraiso/Colinas de Goiás, área da Fazenda Salto, [14°5' S, 47°40' W], mata ciliar em encosta de morro, (fr), 23 Feb. 1991, **B.A.S. Pereira et al. 1533** [FHO, MG n.s.], "árvore ca. 6 m; frutos imaturos de cor verde, vistosos";

– estrada Alto Paraiso/Terezina [= Teresina de Goiás], [ca. 13°59' S, 47°29' W], (fl female), 11 Oct. 1979, **E.P. Heringer et al. 2481** [IBGE n.s., K], "árvore 3 m; cálice verde e corola cor de vinho"; – 18 km from Alto Paraíso de Goiás on the road to Nova Roma, ca. 14°7' S, 47°20' W [correct seems to be: 14°3' S, 47°25' W], low mesophytic forest with strong cerradão influence, (st), 14 Jun. 1994, **J.A. Ratter et al. R7336V** [E], "small tree 6 m tall"; – Chapada dos Veadeiros, 6–7 km E [NE!] of Alto Paraíso on road to Nova Roma, ca. 1400 m, [14°6' S, 47°28' W], cerrado; region of cerrado with sandstone outcrops, giving way above to grassy campo and below to mesophytic forest, (fr), 7 Mar. 1973, **W.R. Anderson et al. 6509** [FHO, NY], "tree 4 m; fruit green"; – estrada de Alto Paraiso para Colinas a 4 km, [14°10' S, 47°34' W], (yfr), 21 Nov. 1994, **D. Alvarenga 907** [IBGE n.s., RB n.s. (dig. photo), UB], "árvore ca. 5 m, 15 cm de diam.; frutos imaturos de cor verde"; – Município de Posse, km 12 da Posse/Guarani de Goiás, via Serra Geral, ca. 800 m, ca. 14°5' S, 46°10' W, cerrado; solo arenoso, (fr), 15 Jan. 1997, **B.A.S. Pereira & D. Alvarenga 3344** [IBGE n.s., RB n.s. (dig. photo), UFG n.s. (dig. photos)], "arbusto ca. 2 m, formado por vários indivíduos saindo de um mesmo ponto na superfície do chão; folhas glabras, subcoriáceas, fruto imaturo cor verde, recoberto por lanosidade ferrugínea"; – Mun. Uruaçu, Fazenda Macaco, [14°32' S, 49°10' W], cerrado; solo areno-argiloso com boa camada de serrapilheira, (defl female), 5 Oct. 1992, **S.P.C. da Silva et al. 19** [CEN], "árvore, 5 cm DAP; frutos imaturos verdes"; – região ca. 800 m da margem dir. do rio Acaba Saco e rio Maranhão, Fazenda Córrego (Corgo) D'Anta, área de influência da UHE Serra da Mesa, 470 m, 14°26' S, 49°0' W, cerrado denso; árvores formam um dossel com ca. 7 m de altura; solo arenoso com muito cascalho e quartzito leitoso, (fr), 4 Aug. 1992, **B.M.T. Walter et al. 1853** [CEN n.s. (dig. photo), RB n.s. (dig. photo)], "árvore 8 m, 14 cm DAP; frutos amarronzados, pilosos, maduros castanhos"; – Mun. Niquelândia, Dolina, ao norte da GO-237 seguindo por estradas das fazendas Lage e Ouro-Fino, entre Uruaçu e Niquelândia, 480 m, 14°6' S, 48°51' W, [correct seems to be: ca. 14°29' S, 48°51' W], mata seca (semidecídua) sobre morro calcário; substrato: pouco solo areno-argiloso, muito calcário em afloramento, (fl male), 7 Oct. 1992, **B.M.T. Walter et al. 2029** [CEN n.s. (dig. photo), W], "árvore 15 m, DAP 30,5 cm; folhas com muito pulgão; botões florais verdes; flor verde; cálice verde-claro; cálice verde-escuro; planta com galhas proeminentes"; – Município Niquelândia, 11 km em direção a Uruaçu, 640 m, 14°28' S, 48°34' W, dentro de mata galeria; solo pedregoso, arenoso, (fr), 22 May 1990, **G. Pedralli et al. 3289** [CEN n.s. (dig. photo), HUEFS n.s. (dig. photo)], "árvore ca. 4 m, escasso; fruto verde, alguns frutos já maduros"; – Niquelândia, Unidade da Votorantim, próxima ao refeitório, 14°27'47" S, 48°26'23" W [correct seems to be: 14°20'47" S, 48°26'23" W], cerrado sentido restrito em regeneração; em cerradão, (fr), 15 Apr. 2007, **D.T. Souza 366** [BHCB n.s. (dig. photo)], "árvore 5 m; frutos imaturos verdes"; – Macedo, km 18 da estrada de chão em direção à mina de níquel, 14°21'30" S, 48°25'10" W, morro com solo serpentino; cerrado, (fr), 14 Dec. 1995, **F.C.A. Oliveira et al. 479** [IBGE n.s., RB n.s. (dig. photo), U], "arvoreta heliofita ca. 3 m, comum; folhas verdes, discolores, cartáceas; frutos verdes, pilosos"; – CNT. Macêdo, ca. 2,5 km abaixo da mina de níquel (grota), 840 m, 14°22'14" S, 48°23'15" W, floresta de galeria; cerrado; solo pedregoso/argiloso, (fr), 29 Nov. 1996, **M.L.M. Azevedo et al. 1082** [IBGE n.s., RB n.s. (dig. photo)], "árvore ca. 10 m × 18 cm, semiciófita, comum; casca gretada; folhas verdes, pilosas, membranáceas; frutos imaturos verdes, pilosos"; – ca. 11 km S of Niquelândia, ca. 750 m, [14°34' S, 48°28' W], gallery, cerrado and adjacent gallery forest, (fr), 24 Jan. 1972, **H.S. Irwin et al. 34976** [F, K, MG n.s., MICH, MO, NY, RB n.s. (dig. photo), US], "spreading tree ca. 7 m × 15 cm; fruit green"; – Município de Flores, Fazenda Cachoeirama, estrada de chão entre Flores e Iaciara, na direção do rio Corrente, parte externa da lagoa, 445 m, 14°17'54" S, 46°57'8" W, lagoa natural circundada por cerrado semi-decíduo; solo com textura areno/argilosa, (fl female), 15 Oct. 2004, **R.C. Mendonça et al. 5839** [IBGE n.s., NY n.s. (dig. photo), RB n.s. (dig. photo)], "arvoreta heliófila, 2,5 m; tronco com casca suberosa, fissurada; folhagem nova; cálice e corola cor verde"; – Município Alvorada do Norte, Fazenda Estância Paraná, 400 m, 14°31'35" S, 46°47'23" W, cerrado; solo arenoso, (fr), 2 Dec. 2003, **G. Pereira-Silva et al. 8008** [CEN n.s. (dig. photo)], "árvore; fruto imaturos verdes"; – estrada de chão para Flores, ca. 540 m, 14°31'8.4" S, 46°34'40.2" W, cerrado; solo arenoso, (fr), 18 Feb. 2003, **R.C. Mendonça et al. 5221** [IBGE n.s., RB n.s. (dig. photo)], "árvore ca. 10,5 m, 25 cm de DAP, heliófita; tronco com casca suberosa, gretada; folhas cartáceas; fruto imaturo verde"; – Município de Mambaí, vale do rio Paranã, afluente do rio Tocantins, 698 m, ca. 14º32'57" S, 46º5'12" W, cerrado outrora denso, convertido em pastagem; solo arenoso, (fr), 22 Nov. 2011, **B.A.S. Pereira & D. Alvarenga 3737** [IBGE n.s., RB n.s. (dig. photo)], "árvore heliófila, decídua, ca. 10 m, 30 cm DAP; ritidoma pardacento, fendilhado; casca viva rosada; frutos jovens de cor verde"; – Serra Geral do Paraná, 7 km by road S of São João D'Aliança, ca. 1100 m, [14°46' S, 47°33' W], dense cerrado on hillside and adjacent campo limpo, (fr), 22 Mar. 1973, **W.R. Anderson et al. 7646** [FHO, NY, UB], "tree 7–8 m tall; fruit green with brown hairs"; – same area but: ca. 20 km S of São João D'Aliança, ca. 1000 m, [14°53' S, 47°34' W], cerrado slopes, (fr), 17 Mar. 1971, **H.S. Irwin et al.**

32083 [NY n.s. (only carp., dig. photo)], "tree ca. 5 m × 8 cm; fruit green"; – same data: **32089** [F, K, MG n.s., NY, US]; – prox. Nova América, 15°5' S, 49°51' W, campo cerrado; solo argiloso, (fr), 20 Mar. 1978, **J.G. Guimarães 54** [RB n.s. (dig. photo)], "árvore 5 m; 20 cm de diâmetro do fuste; frutos jovens verdes"; – rodovia Dois Irmãos à Padre Bernardo, 15°13' S, 48°34' W, floresta estacional decidual; campo cerrado, (fr), 5 Mar. 1978, **J. Paulo 37** [RB n.s. (dig. photo)], "árvore 6 m, 30 cm diâmetro; frutos maduros de coloração verde escuro"; – Município de Vila Propício, Km 12 da GO-230 (Goianésia/Vila Propício), 665 m, 15°22'24" S, 49°0'19" W, cerrado; solo: argilo/cascalhento, (yfr), 22 Oct. 2003, **M.L. Fonseca et al. 4950** [IBGE n.s., RB n.s. (dig. photo)], "árvore heliófita ca. 4 m; DAP 0,08 m; casca gretada; folhas discolores, pilosas, cartáceas; frutos imaturos cor verde"; – region of Fazenda Lagoa Santa, near Padre Bernardo, about 140 km N [NW!] of Brasília, 15°30' S, 48°35' W [correct seems to be: 15°30' S, 48°30' W], in deciduous forest on rich soil, (fl male), 22 Sep. 1972, **J.A. Ratter et al. R2482** [E, K, NY, U, UEC n.s., UC 3×], "tree 15 m tall, 30 cm dbh; male"; – estrada de chão entre Edilândia e Padre Bernardo, ca. 710 m, 15°41'0" S, 48°32'11" W, ecótono de mata de galeria com cerrado; solo argiloso-cascalhento, (fr), 14 Dec. 1999, **R.C. Mendonça et al. 4093** [IBGE n.s., RB n.s. (dig. photo), U], "árvore ca. 10 m; heliófita; folhas membranáceas, discolor verde, com pelos rufos; frutos com cálice verde, imaturos cor verde, maduros cor amarela com pelos ferrugíneos"; – Pirenópolis, 870 m, 15°47' S, 49°8' W, (fr), 5 Apr. 2002, **M. Brito et al. 71** [RB n.s. (dig. photo), UB n.s.]; – Serra dos Pireneus, estrada lateral da estrada Pirenópolis/Cocalzinho que vai para Faz. Portal do Lázaro, rumo a Cachoeira do Coqueiro para Cachoeira Santa, 1020 m, 15°47'29" S, 46°20'15" W [correct is ca. 15°48' S, 48°55' W], área de nascente com solo constantemente encharcado, (fr), 26 Mar. 2006, **P.G. Delprete & L.B. Bosquetti 9654** [UFG 2× n.s. (dig. photos)], "arvoreta ca. 4 m; folhas coriáceas; frutos verdes, aveludadas; sementes envolvidas de gelatina docinho"; – Município de Pirenópolis, Parque Estadual dos Pireneus, Serra dos Pireneus, ca. 1300 m, 15º47'27" S, 48º50'12" W, cerrado arenoso, (fr), 10 Dec. 2005, **M.A. da Silva et al. 5772** [IBGE n.s., SPF n.s. (dig. photo)], "arbusto ca. 2,5 m; folhas pubescentes discolores verdes; frutos imaturos verdes com pilosidade ferrugíneos"; – same area: na base dos Três Picos, 1300 m, 15°47'25" S, 48°50'27" W, floresta umbrófila, (fl male), 25 Nov. 2007, **P.G. Delprete et al. 10466** [MBM n.s., NY n.s. (dig. photo), UFG n.s. (dig. photo)], "árvore 5 m; tronco 25 cm DAP; copa 4 m diâm.; folhas coriáceas, face superior lúcida, face inferior verde-clara; flores verdes-claras"; – same area: 18 km from Pirenópolis en route to Pico dos Pireneus, 1334 m, -15.79120°, -48.83704° [15°48' S, 48°50' W], cerrado, (fr), 22 Feb. 2009, **F. Almeda et al. 9484** [CAS n.s., UEC n.s. (dig. photo)], "tree to 5 m tall, common; bark rough; immature fruits dark green; seeds 3–4 per fruit; seed coat black-brown with white endosperm"; – ca. 21 km E of Pirenópolis, 1000 m, [15°48' S, 48°50' W], gallery margin; extensive sedge meadow (brejo) with adjacent gallery forest and cerrado, (fr), 18 Jan. 1972, **H.S. Irwin et al. 34543** [COL n.s. (dig. photo), DS, F, LIL, MG n.s., NY, UB], "tree ca. 5 m × 12 cm; fruit gray-brown"; – Pirenópolis, beira de estrada, indo para o Parque Pireneus, centro oeste, [15°48' S, 48°50' W], inclinado, (fr), 17 Dec. 2003, **A.H. Salles et al. 2885** [HEPH n.s., RB n.s. (dig. photo)], "arvoreta 4 m; frutos verdes"; – Serra dos Pyreneos [= Pireneus], [15°48' S, 48°50' W], (fl male), 19 [barely legible: Feb.?] 1894, **A.F.M. Glaziou 21709** [BR, G, P], "abrisseau fl. verdâtres"; – Cocalzinho de Goiás, -15.802866, -48.868496 [15°48' S, 48°52' W], (fr), **H. Moreira** [photos of living plants; email 24 April 2013; see also www.bremflores.eco.br]; – BR-414, próximo Corumbá de Goiás, 15°50' S, 48°46' W, mata de galeria, (fr), 1 Mar. 1978, **J. Paulo 4** [RB n.s. (dig. photo), W], "arbusto 2 m; frutos maduros de coloração castanho"; – Santo Antônio do Descoberto, Fazenda Canteiro do Paraiso, Córrego dos Macacós, [ca. 15°58' S, 48°20' W], mata ciliar, (fr), 18 Jan. 1990, **J.E. de Paula 3238** [HRCB n.s., UB n.s., W], "árvore 6 m, 0,12 m DAP; madeira dura; folha coriácea; fruto globoso"; – Serra do Rio Preto, ca. 8 km E of Cabeceiras, 1000 m, 16° S, 47° W [15°48' S, 47°4' W], cerrado and thin woods bordering seasonal creek, (fr), 18 Nov. 1965, **H.S. Irwin et al. 10441** [FHO, NY, UB], "gnarled tree ca. 3 m × 8 cm; fruit green"; – Município Formosa, margem esquerda da Lagoa do Perta Pé (área do exército), área de Influência da AHE Queimado, 15°59'0" S, 47°11'50" W, mata; solo argiloso, (fr), 26 Mar. 2002, **G. Pereira-Silva et al. 6235** [CEN n.s. (dig. photo), W], "árvore ca. 6 m, frequente no local; frutos verdes"; – Unaí/Formosa, UHE [Usina Hidrelétrica] Queimado, [ca. 16°2' S, 47°18' W], cerradão, (fr), 20 Jan. 1998, **L.V. Costa s.n. (BHCB 40883)** [BHCB n.s. (dig. photo)], "árvore 5 m"; – same data: **(BHCB 40882)** [BHCB n.s. (dig. photo), W], "árvore 3 m"; – a margem direita da rodovia Goiânia/São Paulo, Jardim Goiás [Bom Jardim de Goiás], [16°13' S, 52°10' W], cerrado alterado, (defl male), 1 Oct. 1968, **J.A. Rizzo & A. Barbosa 2346** [UFG n.s. (dig. photo)], "árvore 4 m"; – Mossâmedes, encosta da Serra Dourada, estrada para a Reserva Ecológica de Serra Dourada, 4,6 km da rodovia Goiás/Mossâmedes (GO-164), 837 m, 16°5'27" S, 50°11'5" W, cerrado, (yfr), 29 Nov. 2003, **R. Mello-Silva et al. 2231** [K n.s., MBM n.s. (dig. photo), RB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 4 m; súber desenvolvido; folhas discolores, face adaxial verde-escura-brilhante com nervuras verde-claras; frutos imaturos

verdes"; – Município de Mossâmedes, Reserva Biológica Prof. José Angelo Rizzo/Serra Dourada, próximo a Gruta dos Morcegos, [16°5' S, 50°11' W], formação rupestre, (fr), 28 Oct. 1997, **V.L. Gomes-Klein et al. 3368** [RB n.s. (dig. photo), UFG n.s. (dig. photos)], "arbusto ca. 2 m; folhas brilhantes, na face ventral, discolores; frutos ainda jovens, com pilosidade castanho-clara"; – same Reserva: área de transição para formação rupestre, (fr), 10 Nov. 1993, **R. César et al. 37** [UFG n.s. (dig. photos)], "árvore ca. 5 m; fruto verde fortemente recoberto com pelos castanhos"; – same area: cerrado, (fr), 30 Nov. 1996, **589** [UFG n.s. (dig. photos)], "arbusto ca. 3,5 m; folhas verdes discolores; frutos recobertos por pelos pardos; frutos com 10 sementes"; – same area: (fl male), 1 Sep. 1969, **J.A. Rizzo 4468** [RB n.s. (dig. photo), UFG n.s.], "árvore ca. 3 m"; – Serra Dourada, reserva da UFG, cerca de 1 km da cidade de Mossâmedes, [16°6' S, 50°11' W], cerrado, (fl female), 6 Oct. 1992, **J. Fontella et al. 2820** [UFG n.s. (dig. photo), RB n.s. (dig. photo), W], "arvoreta ca. 2–2,5 m; caule bastante suberoso; flores esverdeadas; pétalas atropurpúreas"; – same data but: à 500 m da casa, (fl male), **2822** [UFG n.s. (dig. photo), RB n.s. (dig. photo), W], "arvoreta 1,7–2 m; caule bastante suberoso e tortuoso; flores verdes"; – Serra Dourada, ca. 30 km SE [SW?] of Goiás Velho, 700 m, 14° S, 50° W [ca. 16°5' S, 50°11' W], gallery forest, (fr), 21 Jan. 1966, **H.S. Irwin et al. 11909** [CTES, FHO, NY, UB], "tree ca. 25 m × 60 cm; fruit green"; – 20 km SE [SW?] of Goiás Velho, sandstone summit, 800 m, 14° S, 50° W [ca. 16°5' S, 50°11' W], campo and cerrado, sandstone summit, (fr), 19 Jan. 1966, **11800** [FHO, NY, QCA n.s. (dig. photo)], "gnarled tree ca. 4 m × 10 cm; fruit green; infrequent"; – Município de Abadiânia, próximo à Fazenda Carurú, 1025 m, 16°5'38" S, 48°46'49" W, cerrado alto; solo argiloso, (fr), 12 Mar. 2002, **M.L. Fonseca et al. 3150** [IBGE n.s., RB n.s. (dig. photos)], "arvoreta ca. 3 m, heliófita; folhas discolores, verdes, pilosas, cartáceas; frutos imaturos, verdes, pilosos"; – same data: (fr), **R.C. Mendonça et al. 4643** [IBGE n.s., RB n.s. (dig. photo)], "árvore 8 m, 40 cm DAP, heliófila, comum no local; folhas cartáceas, discolor verde; fruto carnoso imaturo cor verde com pelos rufos"; – Município Luziania, Fazenda Alagado, Ponto 3. AII, 16°14'7" S, 48°10'41" W, mata de galeria; substrato argilo-arenoso com afloramento rochoso espalhado, (fl male), 5 Nov. 2002, **G. Pereira-Silva et al. 6817** [CEN n.s. (dig. photo), W], "árvore 10 m, 8 cm DAP; flor verde"; – próximo ao canteiro de obras, montante, a margem direita da barragem rio Corumbá, 8ª parada, área de influência direta AHE Corumbá IV, 934 m, 16°20'10" S, 48°11'47" W, cerrado; cambissolo cascalhento, (fr), 12 Dec. 2002, **J.M. de Rezende et al. 842** [CEN n.s. (dig. photo), W], "árvore ca. 3 m; fruto imaturo verde"; – same Município: fazenda Pindaibal, [16°13' S, 47°34' W], mata ciliar, (fr), 17 Jan. 1990, **D. Alvarenga & E.C. Lopes 619** [IBGE n.s., MG, RB n.s. (dig. photo)], "árvore ca. 10 m; frutos imaturos de cor verde"; – Município Cristalina, 1,5 km após a fazenda do Sr. Edileno (após a ponte sobre o rio Preto) sentido Palmital, BR-251, na bifurcação à esquerda, área de influência da AHE Queimado, 16°12'17" S, 47°21'22" W, mata ciliar; solo arenoso, (fr), 14 May 2002, **A.A. Santos et al. 1116** [CEN n.s. (dig. photo), W], "árvore ca. 6 m, comum no local; frutos imaturos verdes"; – margem esquerda do rio Arrependido, próximo à foz de pequeno córrego secundário, área de influência da UHE Queimado, 840 m, 16°13'3" S, 47°20'7" W, mata de galeria; solo argiloso, (fr), 6 Mar. 2002, **G. Pereira-Silva et al. 6085** [CEN n.s. (dig. photo), W], "árvore 6 m, ocasional no local; frutos imaturos verdes"; – Município de Anápolis, 17 km do trevo de Anápolis para Nerópolis, estrada do lado esquerdo da rodovia sentido para Nerópolis, [ca. 16°23' S, 49°7' W], (fr), 13 Nov. 1992, **V.L.G. Klein et al. 2029** [UFG n.s. (dig. photos)], "árvore ca. 5 m; folhas verdes discolores; fruto verdes com pilosidade pardacenta"; – km 14 da rodovia Goiânia para Inhumas, [ca. 16°30' S, 49°25' W], cerradão com transição para cerrado, (fl), 2 Dec. 1968, **J.A. Rizzo & A. Barbosa 2872** [UFG n.s. 2× (dig. photos)], "árvore 3 m; corola branca"; – Município de Nerópolis, Parque Estadual Altamiro de Moura Pacheco, PEAMP-Porteira da divisa com a Fazenda Alei, 810 m, 16°31'13.8" S, 49°10'9.3" W, solo areno/argiloso; mata semidecídua, (fr), 29 Mar. 2005, **R.C. Mendonça et al. 5886** [IBGE n.s., SPF n.s. (dig. photo)], "árvore ca. 5 m, 6 cm DAP, semi-ciófila, comum; folhas cartáceas; fruto imaturo cor verde"; – same Parque: Município de Goianápolis, Trilha do Tamanduá, 850 m, 16°33'6.5" S, 49°7'57.8" W, transição de mata seca/cerradão; solo cascalhento, (fr), 31 Mar. 2005, **5912** [IBGE n.s., RB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore ca. 5 m, 12 cm DAP, semi-ciófila; folhas cartáceas discolor verde; fruto imaturo cor verde com penugem na superfície"; – prope Meiaponte, [ca. 16°36' S, 49°18' W], (fl female), Oct. 1892, **E. Ule 1919** [B n.s. (dig. photos), specimen bearing the holotype of *Aecidium anonae* P.Henn.]; – Município de Paraúna, Serra das Galés, [ca. 16°56' S, 50°24' W], cerrado sensu stricto, solo arenoso, (flbuds), 11 Jul. 1995, **H.D. Ferreira et al. 4095** [UFG n.s. (dig. photos)], "arbusto; folhas com a face inferior pilosa e botões florais aveludados"; – área próximo 500 m da Serra das Galés, [ca. 16°56' S, 50°24' W], cerrado, (fr), 22 Oct. 1994, **V.L.G. Klein & R. César 2584** [UFG n.s. (dig. photos)], "árvore 6 m; folhas verdes discolores; frutos verdes"; – a esquerda da rodovia GO-7 Goiânia/Guapó, ocorre o cór. Pindaíba, [ca. 16°46' S, 49°29' W], campo cerrado, (fr), 8 Dec. 1968, **J.A. Rizzo & A. Barbosa 3071** [UFG n.s. (dig. photos)], "árvore 8 m; fruto verde"; – Município Aparecida de Goiânia,

[ca. 16°50' S, 49°11' W], campo limpo, (fl male), 14 Sep. 2002, **J.F.B. Pastore 78** [CEN n.s. (dig. photo), W], "árvore"; – Município de Vianópolis, 16°46' S, 48°32' W, cerrado, (fr), 21 Mar. 1989, **D. Alvarenga et al. 185** [UB], "árvore 3,5 m; folhas membranáceas com aspecto de coriáceas; frutos imaturos de cor verde"; – Serra dos Cristais, ca. 8 km S of Cristalina, 1200 m, 17° S, 48° W [16°50' S, 47°37' W], cerrado, (fr), 6 Mar. 1966, **H.S. Irwin et al. 13662** [FHO, NY], "shrub ca. 1.5 m; fruits greenish brown"; – 47 km S of Goiânia, along highway BR-153, 800 m, [17°6' S, 49°13' W], (fr), 10 Apr. 1976, **G. Davidse et al. 12298** [FHO, MO, SP, W], "tree 10 m; fruit brownish green changing to orange"; – Ipameri, faixa de servidão da BR-050, 951 m, [17°1' S, 47°46' W], cerrado stricto senso, (fr), 24 Nov. 2015, **A. Maruyama & C. Martins 266** [HUFSJ n.s., two photos of the living plant seen], "arvoreta ca. 4 m; frutos de coloração bege"; – Mun. de Mineiros, 800 m, 17°24' S, 53°1' W, savana arbórea aberta; solo areia quartzosa distrófica, (fr), 18 Nov. 1983, **H. Magnago 343** [RB n.s. (dig. photo)], "árvore 6 m; caule castanho; diâmetro do fuste 8 cm; diâmetro da copa 2 × 2 m; fruto verde-piloso"; – Chapadão do Céu, Parque Nacional das Emas, 6 km da sede em Chapadão do Céu, [ca. 18°18' S, 52°48' W], cerrado queimado recentemente, (fl male), 11 Oct. 2006, **J. Paula-Souza et al. 8242** [SPF n.s. (dig. photo)], "arvoreta ca. 2,5 m; flores verdes"; – same data but: 3 km do portão Jacuba, próximo ao ponto Q, (yfr), **8380** [SPF n.s. (dig. photo)], "arvoreta ca. 2,5 m; frutos imaturos verdes"; – Fazenda Maracaná, nr Caiapônia, 16°57' S, 51°49' W, in dense cerrado on sandy soil, (fr), 12 Nov. 1993, **P.E. da Silva R7127** [E, UB n.s., UFG n.s.], "tree 5 m tall, 8 cm dbh"; – Serra do Caiapó, ca. 20 km (straight line) S of Caiapônia, near Rio Claro, 840 m, [17°9' S, 51°48' W], woods and shrubby meadow, by river, (fr), 29 Apr. 1973, **W.R. Anderson et al. 9432** [FHO, NY, UB], "tree 6 m tall; fruit green"; – same area: ca. 20 km S of Caiapônia on road to Jataí, 800–1000 m, 17°12' S, 51°47' W, thicket in periodically flooded meadow, (yfr), 31 Oct. 1964, **H.S. Irwin & T.R. Soderstrom 7613** [F, GH, K, MO, NY, P, RB n.s. (dig. photo), RSA, UC], "tree ca. 4 m × 10 cm; immature fruit green; frequent"; – Jataí/Caiaponia road, 40 kms from Caiapônia, 600–1000 m, [17°17' S, 51°53' W], gallery forest, (st female), 26 Jun. 1966, **D.R. Hunt & J.F. Ramos 6183** [K, NY, UB], "tree 5 m; frs. green"; – same Serra: banks of Rio Claro, 40 km S of Caiapônia, road on Jatai, [17°17' S, 51°53' W], banks of rio, (fl male), 18 Oct. 1964, **G.T. Prance & N.T. Silva 59452** [CAS, FHO, MG n.s., NY, UB], "tree 12 m × 20 cm diam.; corolla green"; – ca. 60 km S of Caiapônia on road to Jataí, 800–1000 m, 17°12' S, 51°47' W [correct seems to be: ca. 17°30' S, 51°53' W], cerradão, (fl male, fl female), 27 Oct. 1964, **H.S. Irwin & T.R. Soderstrom 7437** [NY], "gnarled tree ca. 2.5 m × 8 cm; corolla yellow-green; immature fruit greenish violet; frequent"; – entre Jataí e Caiapônia, cerca de 12 km de Jataí, Fazenda do Sr. João Gouveia, [17°48' S, 51°48' W], cerradão, (fl male), 2 Oct. 1968, **S.G. Fonséca & E. Onishi 955** [K, MG n.s., UB], "arvoreta 2 m; flores esverdeadas"; – same data: **963** [K, MG n.s., UB 2×], "árvore; flores esverdeadas"; – BR-060, estrada Rio Verde/Jataí, [ca. 17°49' S, 51°10' W], cerrado, (fr), 24 Nov. 1997, **R.C. Forzza et al. 401** [SPF n.s. (dig. photo), W], "árvore ca. 2.5 m; ramos com indumento ferrugíneo; folhas nervuras amarelas; frutos imaturos verdes com indumento ferrugíneo"; – Rio Verde, Universidade de Rio Verde (UniRV), [ca. 17°49' S, 51°10' W], fragmento de cerrado, (fl male, female, yfr), 7 Oct. 2013, **R.P. Furtado IFRV 473** [IFRV n.s., W + flowers in alcohol], "árvore 1,5 m"; – Edéia, Fazenda Canadá (CSFCBA), 491 m, 17º39'47" S, 50º6'3" W, cerrado sensu stricto; solo areno-argiloso vermelho com canga (pedras ricas em minério de ferro), (fl male, female), 11 Oct. 2012, **J.E.Q. Faria et al. BP 518** [RB n.s. (dig. photo), UB n.s.], "árvore 3 m; botão verde"; – Mun. de Morrinhos, estrada Morrinhos/Caldas Novas, ocorre o cór. Samambaia, [ca. 17°44' S, 48°59' W], cerrado, (fl), 26 Sep. 1970, **J.A. Rizzo & A. Barbosa 5555** [UFG n.s. (dig. photos)], "árvore 6 m; corola esverdeada"; – Caldas Novas, Parque Estadual Serra de Caldas Novas, [17°48' S, 48°42' W], mata, (fl male), 26 Oct. 2009, **D.I. Junqueira 576** [CEN n.s. (dig. photo), UB n.s.], "árvore 6 m; flor esverdeada"; – Município Caldas Novas, Fazenda Geraldinho, próximo Alternativa 9.1, cerca de 12,7 km do asfalto a 6,3 km de C. Novas direção Corumbá, 17°50' S, 48°33' W, capoeira com elementos de cerrado, (fr), 22 Mar. 1993, **T.A.B. Dias et al. 472** [CEN n.s. (dig. photo)], "árvore ca. 5 m, DAP 15 cm; frutos imaturos verdes"; – Município Corumbaiba, margem esquerda do Rio Corumbá próximo ao eixo da barragem, 520 m, 17°58' S, 48°34' W, mata secundária; solo areno-argiloso com deposição de matéria orgânica, (defl male), 14 Dec. 1993, **G.P. da Silva et al. 2117** [CEN n.s. (dig. photo), W], "árvore 7 m, 15 cm DAP, ocasional; pedúnculo verde"; – Rio Corumbá, rodovia Pires do Rio, [ca. 17°22' S, 48°15' W], margem do córrego, (fl male), 15 Oct. 1960, **E.P. Heringer 7747** [RB n.s. (dig. photo)]; – Mun. Ipameri, margem esquerda do Rio Corumbá, 21 km da Ponte que liga Ipameri/Caldas Novas, próximo a S.O. 23, [ca. 17°33' S, 48°24' W], mata mesofítica antropizada; solo areno-argiloso com matéria orgânica depositada, (fr), 27 May 1993, **H.G.P. Santos et al. 66** [CEN], "árvore 11 m, DAP 8 cm; frutos imaturos verdes"; – estrada de terra de acesso ao córrego Jacubeiro, [ca. 17°43' S, 48°9' W], mata de galeria; substrato arenoso, (fr), 14 Mar. 1997, **T.B. Cavalcanti et al. 2173** [CEN], "arvoreta ca. 3 m; frutos imaturos verdes"; – área de influência direta do AHE Serra do Facão, 17º49'18.20872" S, 47º39'16.82013"

W, cerrado sentido restrito, (fr), 18 Nov. 2007, **A.A. Arantes et al. SF 783** [HUFU n.s. (dig. photo)], "árvore 7 m; cálice ferrugíneo; frutos jovens, rígidos e ferrugíneos"; – Mun. Catalão, rodovia BR-050, próximo a divisa com Campo Alegre, [ca. 17°51' S, 47°46' W], capão de mata em zona de cerrado, (yfr), 6 Nov. 1991, **G. Hatschbach et al. 55817** [C, HBG, MBM n.s. (dig. photo), MO, Z], "árvore 6 m"; – Serra do Facão, UTM 23K, SAD69: 212920E, 8019530N [17°54' S, 47°43' W], cerrado denso, (fl male), 19 Aug. 2007, **A.A. Arantes et al. SF 121** [HUFU n.s. (dig. photo)], "arbóreo 5 m; botões florais imaturos esverdeados"; – ca. 24 km NE of Catalão, 875 m, [ca. 18°0' S, 47°48' W], cerrado and gallery margin, red clay soil, (fr), 22 Jan. 1970, **H.S. Irwin et al. 25094** [F, G, INPA n.s. (dig. photo), L, MG n.s., MO, NY], "tree ca. 6 m × 8 cm, fruit green"; – área de influência do AHE Serra do Facão, 854 m, 18º1'29.09015" S, 47º48'44.40559" W, floresta estacional semidecidual, (yfr), 26 Oct. 2008, **A.S. Siqueira et al. SF 1123** [HUFU n.s. (dig. photo)], "árvore 8 m; frutos verdes"; – same area: 844 m, 18º7'15.36218" S, 47º36'12.67361" W, cerradão, (fr), 26 Apr. 2008, **SF 995** [HUFU n.s. (dig. photo)], "árvore 8 m; frutos imaturos verdes pilosos, maduros amarelos"; – arredores Catalão, [ca. 18°10' S, 47°55' W], cerrado, (fl male), 26 Oct. 1978, **G. Hatschbach & A. Kasper 41702** [C, MBM, UC, Z], "árvore; flor verde"; – Catalão, [ca. 18°10' S, 47°55' W], (fr), Apr. 1960, **A.P. Duarte 1** [MG n.s., RB n.s. (dig. photo)]; – estrada entre Catalão e a divisa com Minas Gerais, ca. 8 km de Catalão, 18°14'54" S, 47°59'40" W, cerrado, (fl male), 8 Sep. 1998, **V.C. Souza et al. 21259** [ESA n.s. (dig. photo), HUEFS n.s. (dig. photo), RB n.s. (dig. photo)], "árvore ca. 8 m; flores creme"; – Catalão, km 744, Fazenda da D. [Dona] Nana, Natália Tomé [not located], (st), 14 Jun. 1997, **H.D. Ferreira & L.F. Bandeira 3485** [UFG n.s. (dig. photos)]; – sheet without data [according to Hiern 1873: 249: "Gozáz" (= Goiás)], (st), 1828, **W.J. Burchell 6994** [K 2×], "10 ft. high"; – without data [according to Hiern 1873: 249: "between Goiavéira and córrego de Jeraguá"; located between the city of Goiás and Pórto Reál (= Porto Nacional in Tocantins)], (fl male), Aug. 1828, **W.J. Burchell 7437** [K 2×], "tree 20–30 ft. high; corolla green"; – without data, (st), 1816–1821, **A.F.C.P. de Saint-Hilaire Catal. C1 736 bis** [P 2×].

Distrito Federal, Brasília, APA de Cafuringa, Fazenda Palestina, 770 m, 15°31.23' S, 48°10.21' W, mata, (fl male), 30 Sep. 1997, **V.V. Mecenas et al. 216** [INPA n.s. (dig. photo), MBM n.s. (dig. photo), UB n.s.], "árvore de 6 m"; – same locality but: margem esquerda do rio do Sal, [15°31' S, 48°11' W], mata de encosta situada próximo a afloramento de calcário a margem esquerda do rio, (fl male), 8 Sep. 1992, **B.A.S. Pereira & D. Alvarenga 2217** [FHO 2×, IBGE n.s., MG n.s.], "árvore ca. 4 m; flores verde claro"; – same area: Fazenda Chapadinha em Jose Pires, 1000 m, 15°33' S, 48°7' W, cerrado; latossolo vermelho amarelo, (fl male, fr), 25 Sep. 1990, **R.F. Vieira et al. 501** [CEN n.s. (dig. photo), W], "árvore ± 5 m, comum; pétalas verdes"; – Parque Nacional de Brasília, estrada que dá no portão 8, 1214 m, 15°37'29" S, 48°2'45" W, cerrado sensu stricto; latossolo, (fr), 5 Jan. 2007, **J.R. Santos et al. 682** [CEN n.s. (dig. photo), W], "fruto imaturos verde"; – same area but: entrada descendo no portão 9, [15°41' S, 47°59' W], cerrado sensu stricto (cerrado ralo); latossolo, (defl male), 10 Nov. 2006, **J.R. Santos et al. 583** [CEN n.s. (dig. photo)], "árvore frequente; flor verde"; – summit of Chapada da Contagem, ca. 10 km E [N!] of Brasília, 1100 m, [15°39' S, 47°57' W], cerrado, (fr), 12 Jan. 1966, **H.S. Irwin et al. 11605** [FHO, NY, UB], "gnarled tree ca. 4 m × 10 cm; fruit green"; – hills ca. 10 km N of Planaltina, 975 m, [15°34' S, 47°40' W], cerrado, (fl female), 2 Oct. 1965, **8875** [FHO], "subshrub ca. 80 cm; perianth rose-pink, becoming green with age"; – Reserva Biológica de Águas Emendadas, ca. 40 km NE de Brasília, Córrego Tabatinga, 1000–1150 m, 15°32–38' S, 47°33–37' W, mata, (fl male), 22 Sep. 1982, **P.E.A.M. de Oliveira 90** [CEN, HEPH n.s., INPA, SP n.s., UEC], "árvore ca. 10 m; folhas novas; flores esverdeadas"; – Planaltina, chapadão do CPAC [= Centro de Pesquisa Agropecuária do Cerrado], área nova, [15°36' S, 47°44' W], campo cerrado; solo de areia quartzosa, distrófico, (fr), 30 Mar. 1982, **S.P. de Almeida et al. 131** [CEN n.s. (dig. photo)], "arbusto 80 cm"; – immediately W of Planaltina, 950 m, [15°37' S, 47°42' W], gallery forest, (fl female, fr), 28 Sep. 1965, **H.S. Irwin et al. 8742** [CTES, FHO, NY, QCA n.s. (dig. photo)], "tree 10 m × 25 cm; flowers green"; – same area and collectors: 1000 m, [15°37' S, 47°40' W], gallery forest, (fr), 20 Jul. 1966, **18305** [FHO, NY 2×], "tree ca. 8 m × 15 cm; fruit yellow-brown"; – Brasília, -15.653402, -47.516921 [15°39' S, 47°31' W], (fr), **H. Moreira** [photos of living plants: email 24 April 2013; see also www.bremflores.eco.br]; – Córrego Pipiripau, [15°39' S, 47°47' W], cerrado, (fl male, fl female), 28 Aug. 1980, **E.P. Heringer et al. 5381** [IBGE n.s., K, MG n.s., US], "arvoreta; folhagem jovem, pilosa; flores e botões amarelados"; – Córrego Landim, ca. 20 km NE of Brasília, 900 m, [15°40' S, 47°45' W], gallery forest, (fr), 7 May 1966, **H.S. Irwin et al. 15675** [FHO, NY], "tree ca. 13 m × 40 cm; fruit green"; – ca. 1 km W of Sobradinho, 1100 m, [15°41' S, 47°49' W], cerrado, (fr), 5 Dec. 1965, **H.S. Irwin et al. 11066** [CTES, FHO, NY, UB], "gnarled tree ca. 5 m × 15 cm; fruit green"; – Brazlândia, Sítio Coité do Cerrado, 15°44'32.79" S, 48°8'59.81" W, (fr), 8 Jan. 2013, **A.M. Alonso et al. F208** [CEN n.s. (dig. photo)]; – same data: (fr), 9 Mar. 2012, **A. Cordeiro & T. Ribeiro 49** [CEN n.s. (dig. photo)], "fruto bege"; – terreno do Country Club, [ca. 15°45' S, 47°55' W], mata ciliar, (fr), 30 May

1965, **D. Sucre 488** [FHO, NY, RB n.s. (dig. photo), UB n.s.], "árvore ca. 15 m"; – Parque Ecológico Norte Burle Marx, [15°45' S, 47°54' W], cerrado sensu stricto; substrato latossolo, (fr), 7 May 2004, **J.R. Santos & G.A. Moreira 232** [CEN n.s. (dig. photo), W], "árvore; fruto marrom"; – Campus da Universidade de Brasília, [15°46' S, 47°52' W], cerrado, (fl male), 15 Oct. 1967, **E.P. Heringer 11577** [FHO, NY, UB], "árvore de 5 m"; – same area: (fl male), 17 Sep. 1963, **L.Q. Cobra & J.O. de Jesus 203** [P], "árvore 5–6 m"; – same locality: (fl male), 1 Oct. 1963, **L.Q. Cobra & J. Oliveira 267** [K, MG n.s.], "árvore de 2 m; flor esverdeada"; – (fr), 15 Dec. 2012, **M. Mercadante FMM 519** [photos of living plants]; – same area: Centro Olímpico, 1012 m, 15°45'57" S, 47°51'22" W, cerrado perturbado, (fl male), 14 Sep. 2006, **P.S. Carvalho et al. 4** [ESA n.s. (dig. photo), UB n.s.], "árvore 3 m"; – Memorial das Idades do Brasil, [15°47' S, 47°48' W], cerrado sensu stricto, (fr), 16 Apr. 2010, **T. Nogales & M. Ianhez 114** [RB n.s. (dig. photo), UB n.s.]; – bacia do Rio São Bartolomeu, cercanias dos córregos Forquilha e da Lage, [ca. 15°45' S, 47°41' W], mata ciliar, (fr), 24 Mar. 1981, **E.P. Heringer et al. 6515** [IBGE n.s., K, MG n.s., MO], "árvore ca. 6 m; folhas discolores; frutos imaturos de cor verde"; – same area and collector: (fr), 25 Nov. 1980, **5766** [K, MO], "árvore ca. 6 m; folhas e frutos imaturos cor verde pilosos"; – [ca. 15°50' S, 47°43' W], antigo cerrado denso, hoje pastagem, (fr), 12 Nov. 1979, **2728** [K, MG n.s., MO, NY, US], "árvore ± 4 m; folhas coriáceas, pilosas; frutos imaturos cor verde, pilosos"; – same area: (fr), 17 Jan. 1980, **3171** [K, MG n.s., MO, NY, US], "árvore ± 5 m; frutos imaturos e folhas pilosas"; – same area: orla de mata ciliar, (fr), 16 Apr. 1980, **4414** [AAU, K, MG n.s., NY 2×], "árvore ca. 4 m; folhas densamente pilosas na página inferior; frutos imaturos cor verde, pilosos"; – same area: (fl male), 9 Sep. 1980, **5449** [K, MG n.s., MO, UEC n.s. (dig. photo)], "árvore pequena; folhagem nova e ramos terminais pilosos; flores e botões esverdeados"; – same area: (fl female), 23 Sep. 1980, **5481** [K, MG n.s., MO, NY, US], "árvore ca. 6 m; folhagem nova pilosa; flores verde amareladas"; – same area: (fl male), 24 Sep. 1980, **5493** [K, MO, NY 2×], "arvore; flores e botões esverdeados"; – same area: (fr), 13 Nov. 1980, **5718** [IBGE n.s., K, MG n.s., MO, NY, US n.s.], "árvore ca. 10 m; copa ampla; casca saliente; folhas pilosas; frutos imaturos cor verde"; – same area: cerrado, (fl male), 3 Feb. 1968, **R.P. Belém 3933** [UB], "árvore de 4 m; flores esverdeadas"; – same area: (fl male), 27 Sep. 1995, **J.E. de Paula 3512** [UB n.s., W], "árvore de 3,5 × 0,13 m; tronco torto, com casca grosa, áspera; folha subcoriácea; inicio da floração; madeira dura"; – same area: em área gramada; cultivada, (fl male), 26 Sep. 1980, **J.W.B. Machado 32** [UB n.s., W], "arvoreta 2,5 m; flores esverdeadas que aparecem apos a brotação de folhas"; – Condomínio Pousada das Andorinhas, próximo à barragem do Paranoá, 1100 m, 15°51'10" S, 47°49'32" W, cerrado sentido restrito; latossolo vermelho escuro, (fl male), 11 Oct. 2001, **G. Pereira-Silva 5561** [CEN n.s. (dig. photo), W], "árvore 6 m"; – Altos do Ribeirão Taboca, [15°51' S, 47°48' W], mata, (fl male), 15 Sep. 1981, **B.A.S. Pereira 51** [IBGE n.s., MG n.s., UB, US], "árvore ca. 5 m; folhas pilosas; flores e botões verde claro"; – Córrego Cabeça de Veado, 1025 m, 15°52' S, 47°51' W, mata de galeria; cerrado; solo orgânico, (fr), 7 Apr. 1994, **A.E. Ramos 606** [BHCB n.s. (dig. photo), CEN, MBM n.s. (dig. photo), UB n.s.], "árvore 16 m; fruto verde-marrom; com botões verdes alaranjados e com frutos grandes"; – Jardim Botânico de Brasília, centro oeste, [15°52' S, 47°50' W], (fl male), 12 Oct. 1999, **L.H. Soares e Silva & F. Chagas e Silva 777** [HUFU n.s. (dig. photo), W], "árvore 5 m; flores femininas esverdeadas"; – same data: **778** [HUFU n.s. (dig. photo)], "árvore ca. 4 m; botões florais e flores masculinas esverdeados"; – same data: (fl male, female, yfr), **780** [GFJP n.s., HUFU n.s. (dig. photo), RB 2× n.s. (dig. photos), SPF n.s. (dig. photo), UB n.s.], "árvore 3,5 m; tronco tortuoso; súber fissurado; frutos imaturos dourados"; – same data: (fl female, yfr), **781** [GFJP n.s., HUFU n.s. (dig. photo), INPA n.s. (dig. photo), RB n.s. (dig. photo), SPF n.s. (dig. photo), UB n.s.], "árvore 4 m; flores e frutos imaturos com pilosidade dourado"; – same data: (fl male), **782** [HUFU n.s. (dig. photo), UB n.s.], "árvore ca. 5 m; flores verde-dourados"; – same area: perímetro do Porcão, borda de mata de galeria; inclinado, (fr), 9 May 2001, **F.P.R. de Jesus 53** [MBM 2× n.s. (dig. photos)], "árvore 10 m; fruto verde, maduro de cor amarela, comestível com sabor adocicado"; – same area: (fr), 13 Nov. 2015, **M. Mercadante 1888** [photos of living plants]; – same data: (fr), 17 Jan. 2015, **FMM 520**; (fr), 23 Feb. 2013, **FMM 521**; (st), 28 Dec. 2013, **FMM 522**; – Brasília, SQN 208, 15°53' S, 45°53' W [correct seems to be: 15°53' S, 47°53' W], cerrado perturbado, (fr), 20 (24) Feb. 1986, **E.A. do Nascimento & B. Catharina 70** [UB, VIES n.s. (dig. photo)], "árvore 2,5 m"; – área de inundação da Barragem do São Bartolomeu, próximo ao Rio Taboquinha, [15°53' S, 47°43' W], (st female), 30 Apr. 1979, **E.P. Heringer et al. 1263** [IBGE n.s., MG n.s., NY], "árvore 4 m, 10 cm diam.; folha subcoriácea, discolor, parte inferior castanho-verde; frutos pilosos"; – same data: (fr), **1265** [IBGE n.s., MG n.s., NY, US], "árvore 3 m; folha subcoriáceas, pilosa; fruto piloso de cor escura"; – same data: local de construção do Paredão, mata "rala" ciliar a um pequeno córrego, (fr), 23 May 1979, **1436** [IBGE n.s., K, NY, UEC n.s. (dig. photo)], "árvore pequena"; – Mata do Riacho Fundo, Fazenda Sucupira (CENARGEN-EMBRAPA), 1080 m, 15°55'27" S, 48°2'0" W, mata de galeria; substrato: latossolo, (fr), 26 Feb. 1998,

A.B. Sampaio et al. 165 [CEN n.s. (dig. photo), UFG n.s. (dig. photos), W], "árvore 10 m; fruto castanho/verde"; – same area and collector: a leste da Fazenda, margem direita da estrada principal, sentido Sede/Núcleo Bandeirante, onde passa córrego artificial, 1080 m, 15°55'27" S, 48°2'0" W, cerrados sentido restrito; latossolo vermelho-escuro, (fr), 10 Jan. 1997, **65** [CEN n.s. (dig. photo), W], "árvore 2 m; fruto imaturo verde"; – same area: Mata do Açudinho, planta coletada no trecho abaixo do açude da sede, denominado cabeceira, margem direita do córrego Açudinho, 1080 m, 15°55'27" S, 48°2'0" W, ecótono mata/cerrado; solo areno-argiloso com serrapilheira superficial, (fr), 11 Apr. 1996, **A.B. Sampaio & J.B. Pereira 8** [CEN n.s. (dig. photo), UFG n.s. (dig. photo), W], "árvore 8 m; fruto bege"; – same Fazenda: a direita da estrada que liga a sede da Fazenda ao restaurante, 1110 m, 15°52' S, 48°0' W [correct is ca. 15°55' S, 48°1' W], cerrado sentido restrito, (fr), 17 Jan. 2001, **E. de S.G. Guarino & P. de A. Salles 595** [CEN n.s. (dig. photo)], "arvoreta ca. 3 m"; – same Fazenda: arredores da mata do córrego "sem nome", um afluente da margem direita do Riacho Fundo, 1070 m, 15°52' S, 48°1' W [correct is 15°55' S, 48°1' W], mata de galeria estreita; latossolo vermelho-amarelo, com alguma serrapilheira, (fr), 10 Jan. 2001, **B.M.T. Walter & E. de S.G. Guarino 4713** [CEN n.s. (dig. photo), W], "árvore 4 m; frutos imaturos verdes"; – same Fazenda: região entre o Recanto das Emas e o Riacho Fundo (Núcleo Bandeirante), 1080 m, 15°55' S, 48°1' W, cerrado (sentido restrito) usado como pasto para gado; latossolo vermelho-amarelo, (fl female), 5 Sep. 1996, **B.M.T. Walter et al. 3457** [CEN n.s. (dig. photo), W], "árvore 2,6 m; folhas discolores (verde-claro na face abaxial e verde-escuro na face adaxial); cálice com pelos ferrugíneos; corola e gineceu verde"; – ca. 10 km S of Brasília, on road to Belo Horizonte, 1200 m, [15°55' S, 47°58' W], burned-over cerrado, (fl male), 23 Sep. 1965, **H.S. Irwin et al. 8575** [NY, UB], "gnarled tree ca. 4 m × 10 cm; flowers green"; – área do Cristo Redentor, 15°54'54" S, 47°53'0" W, campo sujo; latossolo vermelho, (fl male), 14 Sep. 1988, **G.I. Rocha 39** [IBGE n.s., RB n.s. (dig. photo)], "arvoreta ca. 3 m, frequente; folhagem nova, botão floral jovem de cor verde"; – Papuda, [15°55' S, 47°46' W], (defl male), 17 Oct. 1965, **A.P. Duarte 9342-A** [RB 2× n.s. (dig. photos), W]; – same locality: cerradão sobre latossolo vermelho, (yfr), 24 Oct. 1981, **B.A.S. Pereira 115** [IBGE n.s., UB 2×, US], "árvore frondosa ca. 8 m; folha pilosas; frutos jovens cor verde clara; cálice da mesma cor"; – bacia do Rio São Bartolomeu, altos do Ribeirão Papuda, [15°55' S, 47°46' W], cerradão sobre latossolo vermelho, (fr), 18 Feb. 1981, **E.P. Heringer et al. 6223** [IBGE n.s., K, MG n.s., MO], "árvore frondosa ca. 12 m; folhas pilosas; frutos imaturos cor verde"; – same area: (fr), 17 Apr. 1979, **1177** [IBGE n.s., MG n.s., NY, UEC n.s. (dig. photo)], "árvore 8 m; caule ferrugíneo piloso; folhas pilosas subcoriáceas; fruto jovem verde coberto por uma camada de pelos ferrugíneos"; – Capão da Onça, ca. 35 km S of Planaltina, 1000 m, [15°55' S, 47°40' W], gallery, (fr), 22 Feb. 1970, **H.S. Irwin et al. 26510** [F, G, L, MG n.s., MO, NY, Z], "tree ca. 10 m × 25 cm, fruit green"; – Catetinho, [15°57' S, 47°59' W], mata de galeria, (fl female), 26 Sep. 1973, **E.P. Heringer 12884** [MG n.s., UB 2×, W], "árvore 8 m"; – same data: (yfr), 26 Oct. 1975, **14882** [IBGE n.s., MG n.s., UB], "árvore com 5 m; aberta flores internamente roxas"; – same area: cerrado, (st), 12 Apr. 1963, **J.M. Pires et al. 9028** [UB], "arvorezinha cascuda de 2 m; gemas foliares grandes, seríceas"; – Fazenda Água Limpa [University of Brasília field station], 15°56–59' S, 47°55–58' W, mata do Gama, linha 1, (fr), 1 Mar. 1994, **J.M. Felfili et al. 245** [HRCB n.s., UB n.s., W], "árvore 9 m, 7,5 cm diam.; folhas discolor com pilosidade leve; frutos verdes"; – same locality: cerrado s.s., (fl male), 31 Oct. 2006, **V. Gonçalves et al. 2** [HUEFS n.s. (dig. photo)], "árvore 2,2 m, ao se destacar a folha; caule de cor cinza, com fissuras sinuosas; sem exsudação; folhas coriáceas; folhas mortas caídas ao pé da árvore com cor prateada"; – (st), Nov. 1980, **I.L.S.C. da Paixão 47** [UB], "árvore 4 m"; – 1080 m, 15°57' S, 47°54' W, cerrado s.s., (fl male), 25 Sep. 1981, **J.H. Kirkbride Jr. 4453** [HRCB n.s., UB n.s., W], "arbusto ou arvorezinha de 1 a 3 m; flores verdes"; – same Fazenda: Córrego do Gama, 15°57'2" S, 47°58'13" W, mata ciliar, (fr), 21 Oct. 1988, **P.E.N. Silva 38** [E, IBGE n.s., MG n.s.], "árvore ca. 4 m"; – same area: Vargém Bonita, [15°57' S, 47°56' W], cerrado, (st female), 12 Dec. 1961, **E.P. Heringer s.n. (8769/963)** [UB]; – near Vargem Bonita, ca. 18 km SSW of Brasília TV tower, [15°57' S, 47°56' W], cerrado, (fr), 24 Jun. 1976, **J.A. Ratter et al. R3214** [E, NY], "small tree 2.5 m tall; trunk 6 cm in dbh"; – same locality but: cabeceira do Córrego Capitinga, margin of gallery forest, (fl female), 22 Oct. 1976, **R3834** [E, K, MBM n.s. (dig. photo), UEC n.s. (dig. photo)], "tree 8 m; corollas green, turning brown after anthesis"; – same Fazenda: Centro Oeste, [15°57' S, 47°56' W], (fl male), 11 Oct. 1999, **L.H. Soares e Silva & F. Chagas e Silva 771** [ESA n.s. (dig. photo), HUFU n.s. (dig. photo), INPA n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 4 m; flores esverdeadas"; – same data: **772** [ESA n.s. (dig. photo), HUFU n.s. (dig. photo), INPA n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 5 m; tronco tortuoso súber fissurado e gretado; flores masculinas esverdeadas"; – same data: **773** [ESA n.s. (dig. photo), HUFU n.s. (dig. photo), INPA n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 4 m; botões florais e flores masculinas esverdeadas"; – same data: (fl female), **774** [HUFU n.s. (dig. photo), W], "árvore 3,5 m; súber fissurado; botões florais e flores femininas

verde-douradas"; – same data: **775** [HUFU n.s. (dig. photo), W], "árvore 5 m; flores femininas esverdeadas com pilosidade dourada"; – Área de Proteção Ambiental do Gama/Cabeça de Veado, Fazenda Água Limpa/ UnB, Área de Relevante Interesse Ecológico do Capetinga, RA/Lago Sul, ca. 1155 m, 15°58'14.5" S, 47°57'19.1" W, campo rupestre no topo do morro; solo pedregoso, (fl male), 25 Sep. 2002, **R.C. Mendonça & D. Alvarenga 5079** [RB n.s. (dig. photo)], "árvore heliófila, ca. 5 m, 20 cm DAP; tronco com casca corticosa, fissurada, gretada; folhagem nova; flor com cálice verde ferrugíneo; corola verde; planta com muitas galhas"; – Reserva Ecológica do IBGE, 15°56'41" S, 47°56'7" W, (st), 7 May 1990, **A. Divaldo L. et al. 594** [E]; – same Reserva: cerrado, (fl), 11 Oct. 1982, **E.P. Heringer et al. 7527** [IBGE n.s., K n.s., MG n.s., MO n.s., UFG n.s. (dig. photos)], "árvore ca. 2,5 m; folhas pilosas; flores verdes; botão floral verde"; – same Reserva: córrego Roncador entre as chácaras 2 e 3, 15°57'6" S, 47°52'56" W, mata ciliar, (fr), 14 Aug. 1989, **M.L.M. Azevedo & E.C. Lopes 276** [IBGE n.s., MG n.s., RB n.s. (dig. photo)], "árvore ca. 4 m; folhas com a parte abaxial pilosa; frutos maduros de cor amarronzada, pilosos"; – same Reserva: córrego Pitôco, 15°57'53" S, 47°52'55" W, mata ciliar, (fl), 3 Oct. 1989, **D. Alvarenga & F.C.A. Oliveira 484** [IBGE n.s., MG n.s., RB n.s. (dig. photo)], "árvore ca. 5 m; botão floral de cor verde; flores esverdeadas"; – Paranoá, DF-285, próximo a ponte de concreto do rio Preto, na beira do ribeirão São Bernardo, 930 m, 16°3'2" S, 47°19'26" W, mata de galeria; solo areno-argiloso de cor cinzenta, (fl male, yfr), 15 Oct. 2002, **J.M. de Rezende et al. 595** [CEN n.s. (dig. photo), W], "árvore ca. 5 m"; – Granja do Tamanduá [not located, but probably within Distrito Federal], mata ciliar, (fl male), 4 Sep. 1965, **E.P. Heringer 10525** [FHO, NY], "árvore 10 m; flor verde"; – without further data, (fl female), 10 Oct. 1963, **E.P. Heringer s.n. (PMG 9346)** [PMG n.s., SP].

Bahia, Morro do Chapéu, estrada para Bonito, 32 km até entrada para Alto da MR, à esquerda mais 4 km, 1007 m, 11°51'22" S, 41°10'58" W, (fr), 18 Jun. 2011, **E. Melo et al. 10028** [HUEFS n.s. (dig. photo)], "árvore ca. 10 m; folhas coriáceas, discolores; frutos verdes"; – Seabra, 900 m, [12°25' S, 41°46' W], mata de cipó perturbada em alguns trechos, (fr), 13 Feb. 1987, **J.R. Pirani et al. 1995** [K, HUEFS n.s. (dig. photo), NY, SPF (dig. photo), W], "árvore ca. 6 m; frutos imaturos verdes"; – Ibicoara, Chapada Diamantina, Pediplano Central, 1190 m, 13º23' S, 41º25' W, capão de mata mesófila sob solo argilo-arenoso, (st), 17 Jul. 2000, **M. Araújo-Nóbrega 200** [SPF n.s. (dig. photo)], "árvore 3,8 m"; – Serra da Sincorá, ca. 6 km N of Barra da Estiva not far from Rio Preto, 1100 m, 13°35' S, 41°18' W, grassland with scattered shrubs and occasional woodland overlying white sand and crystalline quartz, (fr), 29 Jan. 1974, **R.M. Harley et al. 15652** [CEPEC n.s. (dig. photo), FHO, K, MO, NY, P, RB n.s. (dig. photo), U, US], "tree to 3.5 m; leaves glossy mid-green above, paler brownish-green beneath; fruit green"; – Barra da Estiva, 13°39'59" S, 41°21'37" W, mancha de vegetação lenhosa nos gerais; sólo litólico, (fr), 1 Jul. 1978, **A.P. da Araújo 60** [RB 2× n.s. (dig. photos)], "arbusto 1,3 m; caule cinza; frutos jovens de cor verde"; – Cocos, trilha na beira da estrada de chão que liga Cocos a Minas Gerais (estrada paralela ao caminho para Tamanduá), 14°15'66" S, 44°43'56" W, (fr), 9 Apr. 2005, **S.F. Conceição et al. 156** [BHCB n.s. (dig. photo), HUEFS n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore ca. 7 m; folhas coriáceas, discolores; fruto imaturo verde"; – Oeste, Cocos, Fazenda São Domingos, 14°16'21" S, 44°32'50" W, mata de galeria, (defl male), 23 Sep. 2007, **M.L. Guedes et al. 13573** [ALCB n.s., HUEFS n.s. (dig. photo)], "árvore ca. 10 m, PAP 52,5 cm, frequente; folhas membranáceas, vilosas; inflorescência com flores esverdeadas"; – same area and collectors: 14°16'28" S, 44°32'55" W, (fl male), 22 Sep. 2007, **13609** [ALCB n.s., HUEFS n.s. (dig. photo)], "árvore 8 m, frequente; folhas membranáceas, discolores, vilosas; flores esverdeadas"; – same area: caminho para o Rio Itaguari, 13°24' S, 44°32' W [correct seems to be: ca. 14°16' S, 44°32' W], cerrado, (st female), 29 Aug. 2007, **13714** [ALCB n.s., HUEFS n.s. (dig. photo)], "árvore 12 m; folhas coriáceas, pilosas, discolores; frutos passados"; – same data: (flbuds), **13715** [ALCB n.s., HUEFS n.s. (dig. photo)], "árvore ca. 5 m; folhas membranáceas quando jovens, ferrugíneas; botões esverdeados, vilosos"; – Ilhéus, RPPN Salto do Apepique, rodovia Ilhéus/Itacaré, na altura do km 20 (Ponta da Tulha), entrada à esq., rumo ao Retiro, estrada de acesso à RPPN, [14°36' S, 39°4' W], em mata em regeneração atrás da cachoeira, (fr), Sep. 2004, **P. Fiaschi et al. 2549** [CEPEC n.s. (dig. photo), HUEFS n.s. (dig. photo), NY n.s. (dig. photos), SPF 2× n.s. (dig. photos), W], "árvore ca. 8 m; folhas discolores; nervação amarelada na face abaxial; frutos imaturos verde-escuros"; – Itajuipe, Faz. Sto. Antonio, 18 km S de Itajuipe, [14°50' S, 39°21' W], capoeira, (fl female), 6 Feb. 1970, **T.S. dos Santos 589** [CEPEC n.s. (dig. photo), FHO], "árvore 10 m × 12 cm diâm.; frutos novos verdes"; – Agua Preta, Campo Experimental, [15°14' S, 39°37' W], (fr), 23 Mar. 1964, **G. Bondar 2108** [F, SP]; – Mun. de Camacã (= Camacan), saída para Itaimbé [district of Mun. Potiraguá], [ca. 15°26' S, 39°30' W], (fl female), 28 Nov. 1968, **J. Almeida & T.S. dos Santos 247** [CEPEC n.s. (dig. photo), FHO, MG], "árvore 10 m × 15 cm diâm.; flores em botão verdes e pilosos"; – Município de Santa Cruz Cabrália, área da Estação Ecológica do Pau-Brasil (ESPAB), ca. 16 km a W de Porto Seguro, rodovia BR-367 (Porto Seguro/

Eunápolis), área do arboreto da ESPAB, quadra nº 79, 16°23' S, 39°8' W, (fl), 7 Dec. 1987, **F.S. Santos 723** [CEPEC n.s. (dig. photo)], "árvore 10 m, 0,32 m de diâmetro"; – same data but: quadra nº 82, **726** [CEPEC n.s. (dig. photo)], "árvore 9,8 m, 0,24 m de diâmetro; botões florais de cor marrom; flores esverdeadas"; – same data: quadra no. 53, (fl male), 5 Jan. 1989, **917** [CEPEC n.s. (dig. photo), HUEFS n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 8 m, 25 cm diam.; botões florais cor verde; pétalas cor rosa"; – same data: quadra n° 943, **918** [CEPEC n.s., RB n.s. (dig. photo)], "árvore de 12 m, 0,17 m de diâmetro; pétalas amarelas"; – same data: parcela n° 82 do arboreto, (fr), 3 Apr. 1979, **L.A.M. Silva et al. 323** [CEPEC n.s. (dig. photo), FHO, NY n.s., W], "arvorezinha 6 m × 12 cm; frutos imaturos, verdes e pilosos"; – same data: 81 m, 16°23'36.15" S, 39°11'2.68" W, substrato areno-argiloso, (fr), 7 Aug. 2002, **J. de S. Oliveira et al. 64** [CEN n.s. (dig. photo)], "arbóreo 8 m, CAP 53 cm; pelos nos frutos e na base das folhas; fruto amarelo com cheiro de goiaba, apreciado por animais, possui nódoa [stain]; polpa rosada e casca dura"; – km 18 da BR que liga Porto Seguro a Santa Cruz Cabrália, [ca. 16°22' S, 39°3' W], restinga [?], (fl male), 4 Dec. 1980, **A. Euponino 559** [CEPEC n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 6 m, 20 cm DAP; botões verdes"; – without further data, (st female), s.d., **G. Bondar 2276** [F].

Minas Gerais, Januária, distrito de Fabião, 14°57'46" S, 44°29'12" W, afloramento rochoso próximo à vereda, (fl male), 24 Oct. 1997, **J.A. Lombardi 2051** [BHCB n.s. (dig. photo)], "arvoreta ca. 2,5 m; folhas herbáceas; flores esverdeadas"; – Mun. de Formoso, Fazenda do Sr. Edgar, limite com o Parque Nacional Grande Sertão Veredas, 760 m, 15°15'18" S, 45°59'2" W, cerrado; solo arenoso/argiloso; ecótono de campo sujo com cerrado a beira de uma mata, (yfr), 28 Nov. 1997, **M.L.M. Azevedo et al. 1209** [IBGE n.s., RB n.s. (dig. photo), UEC], "arvoreta ca. 2,8 m; heliofita; frutos imaturos de cor verde"; – same Parque: seda da funatura, [ca. 15°18' S, 45°56' W], cerrado, (fl female, fr), 28 Apr. 1999, **R. Rodrigues-da-Silva et al. 235** [IBGE n.s., RB n.s. (dig. photo), U], "árvore ca. 5 m compr."; – same Parque: Serra do Limoeiro, ca. 11 km da sede, 835 m, 15°21'50" S, 45°57'19" W, solo arenoso; ecótono entre cerrado e vereda, (fl male), 16 Oct. 1997, **R.C. Mendonça et al. 3168** [IBGE n.s., RB n.s. (dig. photo)], "árvore ca. 5 m, 10 cm DAP, heliófita; folha cartácea discolor verde; flor com cálice e corola verdes; anteras cremes"; – Pandeiros ca. 35 km W of Januária, 15°30' S, 44°50' W, in cerradão on sandy soil, (fr), 25 Oct. 1972, **J.A. Ratter et al. R2682** [E, K, NY 2×, U, UEC n.s., UC 3×], "tree 8 m tall, 13 cm dbh"; – Januária, Estrada Pandeiros, sentido Parque Nacional Grande Sertão Veredas, APA-Pandeiros, 15°29'30" S, 44°48' 36" W, cerrado, (fr), 14 Sep. 2003, **M.G. Bovini et al. 2365** [NY n.s. (dig. photo), RB 2× n.s. (dig. photos)], "árvore ca. 10 m, semi-heliófila; folhas membranáceas, discolores, muito pilosas; cálice ferrugíneo; frutos imaturos verdes"; – same data: (fl male), **2366** [RB n.s. (dig. photo), W], "árvore ca. 6,5 m, heliófila; folhas membranáceas, levemente discolores; cálice verde; botões esverdeados"; – Rio Pandeiros, ca. 52 km by road W of Januária near road to Serra das Araras, 520 m, [15°30' S, 44°46' W], sandy beach and adjacent woods and cerrado; edge of woods near river, (fr), 21 Apr. 1973, **W.R. Anderson et al. 9304** [FHO, NY], "tree 14 m; fruit green"; – Município Unai, mata de galeria à esquerda, cerca de 1 km da guarita de acesso para Palmital, área de influência da AHE Queimado, 16°11'26" S, 47°19'4" W, mata de galeria; solo argiloso com afloramento de cascalho, (fr), 19 May 2003, **A.A. Santos & J.B. Pereira 2008** [CEN n.s. (dig. photo), W], "árvore 5 m; frutos imaturos verdes, maduros amarelos"; – Município Cabeceira Grande, margem esquerda do rio Preto (próximo à ponte de madeira), área de influência da AHE Queimado, 800 m, 16°11'13" S, 47°19'53" W, mata de galeria perturbada; solo argilo-arenoso, (fl male), 27 Mar. 2002, **G. Pereira-Silva et al. 6323** [CEN n.s. (dig. photo), W], "arbusto ca. 2 m, flor creme"; – Município de Unaí, km 29 da rodovia Unaí/Cabeceiras de Goiás, ca. 800 m, [ca. 16°7' S, 46°50' W], remanescente de mata estacional, (fr), 22 Nov. 1996, **B.A.S. Pereira & D. Alvarenga 3266** [IBGE n.s., RB n.s. (dig. photo), UFG n.s. (dig. photos)], "arvoreta ca. 4 m; frutos imaturos de cor verde, pilosos"; – São Romão, Rio Urucuia próx. à foz do Rio Escuro, Cond. Urucuia, [16°17' S, 45°13' W], cerrado, (fl male), 23 Aug. 1990, **E.T. Neto 532** [BHCB n.s. (dig. photo), W]; – Grão Mogol, nas adjacências do Córrego Escurona, 750 m, ca. 16°35' S, 42°58' W, cerrado, (st), 16 Jun. 1990, **J.R. Pirani et al. CFCR 13189** [SPF (dig. photo), W], "arbusto 70 cm; gemas ocraceas"; – same area: mata próxima ao campo de aviação, ca. 1000 m, 16°33'18" S, 42°52'30" W, em clareira no interior da mata, (flbuds male), 5 Nov. 1987, **I. Cordeiro et al. CFCR 11569** [SPF n.s. (dig. photo), W], "arvoreta ca. 4 m; folhagem jovem verde-clara; botões verde-glaucos"; – Mun. Cristália, estrada para Botumirim, a E de Boa Vista do Bananal, 810 m, 16°44'25" S, 42°53'9" W, campo cerrado; solo arenoso-pedregoso, (fr), 16 May 1998, **J.R. Pirani et al. 4353** [BHCB n.s. (dig. photo), SPF (dig. photo), W], "árvore 5 m, copada, heliófila; frutos amarelos com polpa carnosa"; – Juramento, Fazenda Tamanduá, Plantar MG 15, [ca. 16°53' S, 43°33' W], cerrado, (fl male), 10 Apr. 2005, **E.T. Neto 4286** [BHCB n.s. (dig. photo)]; – Serra da Anta, ca. 5 km NW of Paracatú, 800 m, [17°11' S, 46°55' W], rocky hillside, recently burned over, mostly with cerrado, (fr), 4 Feb. 1970, **H.S. Irwin et al. 26000** [DS, F, MG n.s., NY, P, SP n.s., W], "tree ca. 5 m × 20 cm; fruit green"; – Município

de Paracatú, rodovia BR-040 (Brasília/Belo Horzonte) entre Paracatú e João Pinheiro, 17°17' S, 46°46' W, cerradão, (fr), 4 Mar. 1989, **M.P. Neto et al. 269** [MG n.s., RB n.s. (dig. photo), UB, UEC n.s. (dig. photo)], "árvore 12 m; frutos imaturos de cor verde com pelos ferrugíneos"; – Granjas Reunidas, ramal de Montes Claros, [17°25' S, 43°59' W], cerradão, (fl male), 9 Mar. 1929, **J.G. Kuhlmann 84** [MBM n.s., NY n.s. (dig. photo), RB 2× n.s. (+ carp. 1938, dig. photos), SP n.s.], "árvore 5–8 m"; – Mun. Joaquim Felício, Serra do Cabral, 1200 m, [ca. 17°44' S, 44°17' W], campo rupestre; solo arenoso, (fr), 15 Apr. 1996, **G. Hatschbach et al. 64833** [K MBM n.s.], "arbusto 2,5 m"; – Lagamar, Reserva Vegetal da Companhia Mineira de Metais (CMM), 0308174/8011307 UTM [17°59' S, 46°49' W], mata mesófila, (fr), 1 Feb. 2003, **A.S.S. Alves & A.A. Alves 198** [HUFU n.s. (dig. photo)], "árvore 12 m; fruto verde"; – same data: 0308183/8011283 UTM [17°59' S, 46°49' W], (st), 31 Aug. 2003, **576** [HUFU n.s. (dig. photo)], "árvore 3 m; botão floral"; – Mun. Monjolos, estrada Monjolos/Conselheiro Mata, ca. 2 km NE de Rodeador, 770 m, 18º17'33" S, 44º2'13" W, afloramento de calcário com mata decídua rala com gameleiras (*Ficus calyptroceras*), (fr), 12 Jan. 1998, **J.R. Pirani et al. 3922** [CEPEC n.s., SPF n.s. (dig. photo)], "arvoreta 4 m, com escassa folhagem; frutos verdes"; – Diamantina, Galheiros, próximo ao campo experimental da UFVJM, 1270 m, 18°16'22" S, 43°47'11" W, campo rupestre; solo pedregoso em pastagem com gado, (fr), 11 Feb. 2014, **M. Verdi et al. 6797** [MBM n.s., RB n.s. (dig. photo)], "árvore 4 m, muito frequente; folhas verdes, discolores, ferruginosa abaxial; – São Gonçalo do Rio Preto, Parque Estadual do Rio Preto, da casa de hóspedes (18°7'34" S, 43°21'24" W) a cascata do Ribeirão das Éguas (18°8'43" S, 43°22'10" W) e então por fim ao camping (18°6'54" S, 43°20'28" W), cerrado e vegetação ribeirinha, (fr), 8 Apr. 2000, **J.A. Lombardi et al. 3849** [BHCB n.s. (dig. photo)], "arvoreta ca. 3 m; folhas coriáceas; frutos imaturos e maduros verdes"; – same area: do alojamento ao ribeirão das Éguas (18°8'37" S, 43°22'16" W), daí margeando o rio até a cachoeira dos Crioulos (18°8'42" S, 43°22'17" W) e depois pelo rio e trilha no cerrado até o camping, vegetação ripária, (yfr), 18 Nov. 1999, **J.A. Lombardi 3549** [BHCB n.s. (dig. photo)], "árvore ca. 3 m; folhas cartáceas; frutos imaturos verdes"; – same area: trilha para o Poço dos Veados, 18°6'45" S, 43°20'27" W, cerrado, (fl male), 18 Oct. 2000, **4099** [BHCB n.s. (dig. photo)], "árvore ca. 3 m; folhas papiráceas; flores verdes"; – Ituiutaba, Serra do Corpo Seco, 680 m, 19º1'59.8" S, 49º28'0.4" W, cerrado, (fr), 31 Mar. 2012, **A.R. Rezende & V.M. Teodoro 650** [HUFU n.s. (dig. photo)], "árvore 7 m; fruto verde com odor semelhante ao de goiaba, quando aberto"; – same area: Cerrado da Lôba, [ca. 19°2' S, 49°28' W], cerrado, (fl male, st female), 13 + 30 Sep. 1944, **A. Macedo 403a** [SP], "árvore geralmente pequena com casca lisa; flores verdes; frutos quando maduros são amarelos e encerram grandes sementes gomosas e adocicadas"; – same locality: (fl female), 13 Sep. 1944, **403b** [SP 2×]; – same locality: (fl female, fr), 30 Sep. 1944, **403** [RB 2× n.s. (dig. photos), W]; – same locality: capoeira, (fl female), 6 Oct. 1944, **403** [LIL, MG n.s.]; – Município Ituiutaba, [ca. 19°2' S, 49°28' W], cerrado, (fl male), 28 Aug. 1948, **A. Macedo 1185** [S, US], "árvore; flores verdes"; – Furuc? de S. Vicente, Ituiutaba, [19°5' S, 49°30' W], capoeiras, (fl female), 15 Sep. 1948, **A. Macedo 1227** [US], "pequena árvore; flores verdes femininas; fruto amarelo com polpa adocicada"; – Município de Monte Alegre de Minas, Fazenda Represa, [ca. 18°52' S, 48°53' W], cerradão, (fl male), 19 Jun. 2005, **P.P. Damaso et al. 124** [HUFU n.s. (dig. photo)], "árvore ca. 5 m; cálice verde; corola vinho"; – Araguari, Capim Branco II, [ca. 18°38' S, 48°21' W], mata decídua, borda, (yfr), 24 Oct. 2007, **G.M. Araújo & A.E. Gusson s.n. (HUFU 49037)** [HUFU n.s. (dig. photo)], "árvore ca. 12 m; fruto verde"; – same data: mata semidecídua, (fl male, fr), 22 Oct. 2007, **s.n. (HUFU 49073)** [HUFU n.s. (dig. photo)], "árvore ca. 5 m; corola creme esverdeada"; – Uberlândia, Capim Branco II, [ca. 18°38' S, 48°21' W], mata semidecídua, (fl female), 10 Sep. 2007, **P.O. Rosa et al. 863** [HUFU n.s. (dig. photo)], "árvore ca. 15 m; frutos verdes"; – same data: (fl male), **867** [HUFU n.s. (dig. photo)], "árvore ca. 10 m; botões florais verdes"; – Capim Branco II, Fazenda Dona Lurdes [or Lourdes], [ca. 18°38' S, 48°21' W], mata semidecídua, (fr), 9 Apr. 2005, **G.M. Araújo et al. s.n. (HUFU 43248)** [HUFU n.s. (dig. photo)], "árvore 3 m; fruto verde"; – same data: (fl male), 21 Sep. 2005, **s.n. (HUFU 43247)** [HUFU n.s. (dig. photo)], "árvore 13 m; flores esverdeadas"; – same locality: (defl female, yfr), 10 Nov. 2005, **A.S. Siqueira & R.V. Kilca s.n. (HUFU 43699)** [HUFU n.s. (dig. photo)], "árvore 2,5 m; fruto verde"; – same locality: (fr), 1 Feb. 2006, **R. Kilca et al. s.n. (HUFU 47073)** [HUFU n.s. (dig. photo)]; – same locality: (fr), 8 Dec. 2006, **P.O. Rosa et al. 104** [HUFU n.s. (dig. photo)], "árvore ca. 5 m; frutos imaturos verdes"; – same data: (fr), 25 Jan. 2007, **328** [HUFU n.s. (dig. photo)], "árvore ca. 2 m; frutos imaturos verdes"; – Araguari, Capim Branco I, Funil I, [ca. 18°48' S, 48°7' W], mata decídua, interior, (fr), 15 Dec. 2006, **P.O. Rosa et al. 266** [HUFU n.s. (dig. photo)], "árvore ca. 12 m; frutos imaturos verdes"; – same data: (fl female), 17 Sep. 2007, **892** [HUFU n.s. (dig. photo)], "árvore ca. 5 m; botões florais verdes"; – Fazenda São Pedro-Itaú, 18°55'51" S, 48°3'50" W, floresta estacional semidecídual, (fr), Jan. 2009, **I. Schiavini et al. PPFES 570** [HUFU n.s. (dig. photo)]; – Triângulo Mineiro, Vale do Rio Araguari, Mandaguari, [ca. 18°57' S, 47°54' W], (fr), 19 Feb. 1991, **A.L.P. Mota 113** [HUFU n.s.

(dig. photo)], "árvore ca. 14 m; frutos imaturos verdes"; – Mun. de Indianópolis, Fazenda Bela Tanda and neighboring fazendas, 6 km NE of Indianópolis, 850 m, 19°3' S, 47°57' W, cerrado vegetation, (fl male), 30 Sep. 1983, **G. Gottsberger 35-30983** [ULM n.s., W], "treelet 1–2 m tall; flowers greenish"; – same area: (fl female), 27 Sep. 1990, **I. Gottsberger & G. Gottsberger 15-27990** [ULM n.s., W], "tree 5 m tall; green flowers"; – Vale do Rio Araguari, UHE de Miranda, mata do Córrego Volta Grande, 18°54'45"–19°8'15" S, 48°2'30"–47°43'15" W, (st), 28 Jul. 1992, **A.L.P. Mota et al. 1217** [VIC n.s. (dig. photo)], "altura 11 m, CAP de 40 cm; casca marrom escura, ligeiramente gretada; casca interna castanho-rosada finamente estriada; alburno bege; gema conspícua amarelo ferruginosa"; – same locality: (st), 1 May 1993, **1652** [VIC n.s. (dig. photo)], "10,5 m, CAP 45 cm; base do tronco sulcado; casca superficialmente gretada; casca interna castanha rosada; frutos pilosos ferrugíneos"; – same area: área 10, (fr), 22 Nov. 1993, **2084** [HUFU n.s. (dig. photo), VIC n.s. (dig. photo)], "árvore ca. 7 m; frutos imaturos de cor verde com pubescência ferrugínea"; – mata de cerrado Zé Costa, 18°54'45"–19°8'15" S, 48°2'30"–47°43'15" W, (st), s.d., **A.L.P. Mota et al. 911** [VIC n.s. (dig. photo)], "Indivíduo 6121"; – same locality: (fr), 28 Nov. 1991, **1036** [HUFU n.s. (dig. photo), VIC n.s. (dig. photo)], "casca marrom-escuro e cinza, ligeiramente gretada; casca interna rosada; alburno bege; frutos imaturos verdes; Indivíduo 6121"; – same locality: cerrado José Costa, (fr), 15 Oct. 1991, **1036** [HUFU n.s. (dig. photo)], "árvore ca. 7 m; frutos imaturos; > 6121"; – Triângulo Mineiro, Prata, [ca. 19°18' S, 48°55' W], cerrado, (st), 5 Sep. 1949, **H. Labouriau 732** [RB n.s. (dig. photo), W], "árvore suberosa; flor amarela"; – Prata, BR-153, 9 km de Prata em direção a Comendador Gomes, 800 m, 19.3825° S, 48.8978° W [19°23' S, 48°54' W], cerrado em beira de estrada, (fr), 14 Jan. 2005, **V.C. Souza et al. 30401** [ESA n.s., W], "arvoreta ca. 4 m; frutos imaturos verdes"; – Tejuco, [ca. 19°15' S, 48°32' W], cerrado, (fr), 6 Feb. 1994, **G. Hatschbach et al. 59861** [C, CTES, HBG, HUFU n.s. (dig. photo), MBM n.s. (dig. photo), Z 2×]; – Estação Ecológica do Panga [part of the former Fazenda Santa Luzia], [19°10' S, 48°24' W], mata mesófila semidecídua, (fl male), 16 Sep. 1989, **G.M. da Araújo 639** [HUFU n.s. (dig. photo), UEC, W], "árvore 8 m"; – same area: (fl), 9 Oct. 1986, **I. Schiavini s.n. (HUFU 579)** [HUFU n.s. (dig. photo)], "flor verde amarela"; – na estrada para a Estação Ecológica do Panga, [ca. 19°10' S, 48°24' W], cerrado perturbado, (defl male), 30 Sep. 1992, **P.E. Oliveira 3006** [HUFU n.s. (dig. photo)]; – Morro das Pedras, ca. 30 km NE of Patrocínio, 1000 m, [18°43' S, 46°53' W], cerrado and gallery margin, (fr), 29 Jan. 1970, **H.S. Irwin et al. 25660** [COL 2× n.s. (dig. photos), F, MG n.s., MICH, NY, R, U], "shrub 2 m; fruit green"; – Município de Patrocínio, rodovia MG-188, 18°48'31" S, 46°54'56" W, mata, (fr), 28 Feb. 1989, **M.P. Neto et al. 204** [MG n.s., RB n.s. (dig. photo), UB], "árvore 6 m; folhas membranáceas; frutos imaturos de cor verde com pelos da cor de ferrugem"; – Patrocinio, Fazendas DATERRA, Boa Vista, [ca. 18°59' S, 46°59' W], cerrado "sensu stricto", (fr), 14 Dec. 1998, **F.T. Farah et al. 711** [ESA n.s. (dig. photo)], "arvoreta 3 m; frutos verdes"; – Município de Perdizes, EPDA Galheiro, Estação Ambiental Galheiro, Trilha dos Primatas, [ca. 19°13' S, 47°9' W], mata semidecídua, (fr), 12 Apr. 2003, **R. Arruda et al. 407** [F n.s. (dig. photo), HUFU n.s. (dig. photo)], "árvore ca. 5 m; frutos esverdeados"; – Perdizes, próximo à entrada para a sede da Fazenda José Ferreira D'Ávila, Unidade de Conservação do Galheiro, [ca. 19°13' S, 47°9' W], cerrado, (fl male), 26 Sep. 1994, **E.T. Neto & M.S. Werneck 1435** [BHCB n.s. (dig. photo), W]; – Patos de Minas, 800 m, [ca. 18°35' S, 46°31' W], cerrado, (fr), 23 Aug. 1950, **A.P. Duarte 3247** [RB n.s. (dig. photo)], "arbusto ca. 2 m"; – same data: (fr), Aug. 1950, **4373** [RB n.s. (dig. photo)]; – Serra do Salitre, [19°6' S, 46°41' W], (fr), 25 Nov. 1986, **J.R. Stehmann et al. s.n.** [BHCB], "árvore; fruto verde"; – Rio Paranaíba, 4 [km] W da cidade de Rio Paranaíba, [ca. 19°12' S, 46°17' W], mata xerófita no alto morro com cascalho ferruginoso rolão, (fr), 3 May 1952, **G.M. Magalhães 5659** [BHCB n.s. (dig. photo), BHMH n.s.], "árvore 5–6 m; frutos maduros comestíveis"; – Mun. Ibiá, Córrego José Nunes, [19°29' S, 46°32' W], (fl female), 17 Oct. 1987, **Pedralli & Meyer QAPEM905** [MBM], "arvore; flor verde"; – same area: área 5, (fr), 10 Mar. 1988, **QAPEM1116** [MBM]; – Santana do Pirapama, Serra do Cipó, a Norte da Faz. Inhame, trilha da Serra Morena, 730 m, 18°55'37" S, 43°47'47" W, cerrado, (fr), 12 Mar. 2009, **D.C. Zappi et al. 2060** [CEPEC n.s., K n.s., RB 2× n.s. (dig. photos), SPF n.s. (dig. photo)], "arvoreta 5 m, 10 cm diâm.; frutos verdes rígidos"; – Horto Florestal de Paraopeba, [19°16' S, 44°24' W], cerrado, (st), 9 Sep. 1964, **P. Cavalcante 1130** [MG n.s., SP], "árvore pequena"; – same Horto: solo vermelho, (fl female, yfr), 2 Jun. 1956, **E.P. Heringer 2206** [RB n.s. (dig. photo), UB], "árvore, frutifica abundantemente; galhos por dentro"; – Paraopeba, Estação Florestal de Experimentação (EFLEX), [19°16' S, 44°24' W], cerrado stricto sensu, (yfr), 17 Nov. 2000, **A.P. do C. Balduino et al. 35** [VIC n.s. (dig. photo)]; – same Estação: (fr), 16 Apr. 1983, **M.C.S. Junior & A.F. da Silva 536** [VIC n.s. (dig. photo)], "árvore ca. 6 m; frutos verdes e quando maduros amarelos"; – same Estação: (fr), 22 Apr. 2000, **G.E. Valente & J.A.A.M. Neto 511** [VIC n.s. (dig. photo)], "árvore ca. 5 m; fruto de coloração pardacenta"; – same locality: no interior do cerradão próximo à formação de calcário, (fr), 14 Apr. 2001, **737** [VIC n.s. (dig. photo)], "árvore ca. 6 m"; – vieille route de Porto de Jequitiba, [ca. 19°14' S, 44°2'

W], (yfr), 24 Nov. 1893, **A.F.M. Glaziou 20407** [C, F (fragm. ex B), MG n.s., NY, P]; – Santana do Riacho, Cardeal Mota, Serra do Cipó, Morro da Pedreira, segundo grupo (grande afloramento de metacalcário), 830 m, 19°20' S, 43°40' W, mata semidecídua, (fr), 2 Apr. 1996, **J.R. Pirani et al. 3668** [MBM n.s., NY n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 7 m; frutos imaturos verdes"; – same area: floresta decidual, na base dos afloramentos metacalcário (blocos do grupo I), margem da trilha, (fr), 20 Jul. 2006, **E.G.A. Martins et al. 33** [HCF n.s., HUEFS n.s., SPF 2× n.s. (dig. photos; only twig on left side on SPF 211230), W 2×], "árvore ca. 8 m; copa com escassa folhagem; folhas coriáceas, discolores, verde-amarelada na face abaxial, com indumento ferruginoso; frutos imaturos verdes"; – Mun. Cardeal Mota, Serra do Cipó, estrada em frente à Pousada Fazenda Monjolo, Trilha do Paredão, próximo à cachoeira, [19°21' S, 43°39' W], (fl male), 24 Sep. 2002, **L.S. Kinoshita et al. C011** [UEC n.s. (dig. photo)], "arbusto ca. 1,5 m; flores verde-amareladas"; – Itambé do Mato Dentro, Distrito de Santana do Rio Preto (Cabeça de Boi), APA do Parque Nacional da Serra do Cipó, trilha da Peroba, 19º24'52.0" S, 43º25'52.8" W, (fr), 25 Aug. 2007, **M.F. Santos & E.G. Martins 167** [BHCB n.s., RB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 9 m; pilosidade ocre nos ramos; folhas opacas; frutos velhos coletados do chão"; – Matozinhos, Fazenda Castelo de Jagoara, 19º28'23.8" S, 43º59'15.2" W, ecótono cerradão/mata ciliar, (fr), 25 Jun. 2006, **G. Ceccantini et al. 2856** [SPF n.s. (dig. photo)], "árvore 12 m, CAP 98 cm; fruto marrom"; – Matozinhos, Cerrado PRECON, 785 m, 19°30'27.79" S, 43°57'18.29" W, cerrado, (fr), 1 Feb. 2007, **G. Ceccantini et al. 232** [BHCB n.s. (dig. photo)], "árvore 3,5 m, CAP 26 cm; fruto verde com resina"; – same area: (st), 31 Mar. 2006, **2735** [SPF n.s. (dig. photo)], "árvore 7 m, CAP 93 cm"; – same data but: **G.Q. Freire et al. 232** [SPF n.s. (dig. photo)], "árvore 3,5 m, CAP 26 cm; fruto verde com resina"; – Cerradão IBAMA, 758 m, 19°30'27.9" S, 43°57'18.3" W (WGS84), (flbuds female), 24 Oct. 2006, **J.C.F. Melo Jr. et al. 582** [BHCB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore 8 m, DAP 18 cm; folhas novas; botões verdes"; – Mun. Santa Luzia, Lagoa Santa, [19°38' S, 43°53' W], cerrado, (fr), 20 Nov. 1933, **H.L. de M. Barreto 5076** [F], "árvore 3 m"; – same Lagoa, cerrado, (fl male), 26 Oct. 1965, **R. Goodland 102** [MG n.s., NY]; – same area: (st), s.d., **P.W. Lund s.n.** [C], "arbor campestris"; – same: (fl female), s.d., **E. Warming s.n.** [C 2×, P 2×]; – all the following with the same data: (st), s.d., **s.n.** [C], "frutex sylvestris"; (st), 2 Sep. 1863, **325** [C]; (fl female), 21 Oct. 1863, **s.n.** [C]; (st), 25 Jun. 1864, **s.n.** [C]; – prope St. Luzia, [ca. 19°47' S, 43°56' W; see URBAN 1894], in sylv. mont., (fl male), Oct. 1824, **L. Riedel 701** [MO, NY 2×]; – Santa Luzia, Empresa MetalCentro, 19°47'56" S, 43°51'30" W, em pasto aberto, (fr), 28 Mar. 2007, **D.T. Souza 124** [BHCB n.s. (dig. photo)], "árvore 4 m; frutos imaturos verdes"; – Fundação Zoo-Botânica de Belo Horizonte, Mata do Pau d'óleo (setor extra), [ca. 19°52' S, 44°1' W], mata mesófila, (fr), 15 May 1997, **C.V. Mendonça et al. 346** [BHZB n.s., SPF n.s. (dig. photo)], "arbóreo; frutos maduros"; – Belo Horizonte, Estação Ecológica da UFMG, ca. 19°52' S, 43°58' W, (st), 18 May 2001, **A.F. Silva et al. 123** [BHCB n.s. (dig. photo)]; – same locality: trilha C, cerrado, (fl female), 19 Sep. 1990, **E.T. Neto 175** [BHCB n.s. (dig. photo), W]; – same locality: mata suja, (fr), 6 Jul. 1981, **G. Wilson 877** [BHCB n.s. (dig. photo), W]; – same locality: área urbanizada, (fl female), 10 May 1993, **J.A. Lombardi 215** [BHCB n.s. (dig. photo), W], "árvore 4 m; folhas cartáceas ferrugíneas; flores esverdeadas; frutos maduros amarelados e pilosos"; – same locality: capoeira, (fl female), 25 Sep. 1993, **J.A. Lombardi & E.M. Borba 444** [BHCB n.s. (dig. photo), W], "arvoreta 2,5 m; folhas cartáceas"; – same area: capoeira, muito frequente, (fl male), 19 Oct. 1942, **J.E. de Oliveira 1158** [IAN n.s., US], "árvore 3 m; flores verdes"; – Belo Horizonte, [ca. 19°52' S, 43°58' W], in campestribus siccis, (fr), Mar. 1907, **I.C. Prates s.n.** [R]; – Acaba Mundo, [19°58' S, 43°56' W], campo, (st), 8 Mar. 1934, **A.J. de Sampaio 7411** [R], "árvore 2 m"; – Serra do Curral, [19°58' S, 43°55' W], cerrado, (fl male, fr), 6 Oct. 1955, **L. Rennó s.n.** [BHCB n.s., CESJ n.s., ESA n.s., MBM n.s. (dig. photo), SPF n.s. (dig. photo)], "arbusto 1 m; fl. amarelas esverdeadas"; – Parque Roberto Burle Marx, [20°0' S, 44°0' W], área mais alta de cerrado, (fl female), 7 Oct. 2006, **J.D. Silva 115** [BHCB n.s. (dig. photo)]; – Santa Rita do Itueto, estrada Escola Miguel Medeiros, [ca. 19°21' S, 41°26' W], capoeirão, (fr), 11 Apr. 2007, **A.A. da Luz 392** [CVRD n.s., W], "árvore 7 m; fuste 1 m, cilíndrico; CAP fuste 40 cm; diâmetro da copa 5 m; casca áspera; seiva incolor; fruto imaturo verde, maduro amarelo"; – Itueta, estrada Córrego Estrela, [ca. 19°24' S, 41°12' W], pasto, (fr), 1 Jun. 2006, **A.A. da Luz 331** [CVRD n.s., W], "árvore 10 m; fuste 4 m, cilíndrico; CAP fuste 80 cm; diâmetro da copa 6 m; casca áspera; descamação ausente; seiva incolor; fruto imaturo verde, maduro amarelo"; – estrada Conceição do Itucto [do Capim] a Sta. Rita do Intucto [Itueto], [ca. 19°28' S, 41°15' W], mata ciliar, (fr), 19 Jun. 2001, **A.A. da Luz 9** [CVRD n.s., W 2×], "arbor 16 m; fuste cilíndrico, 10 m de alto; CAP do fuste 90 cm; diâmetro da copa 6 m; casca áspera; descamação ausente; seiva incolor; fruto imaturo verde, maduro amarelo"; – Estação Biológica de Caratinga, [ca. 19°44' S, 41°49' W], mata atlântica, (fr), 21 Dec. 1984, **M.A. Lopes & P.M. Andrade 713** [BHCB n.s. (dig. photo)], "arbóreo; frutos verdes coletados no chão junto às folhas"; – same area: Matão, T.B., mata secundária, (fl male), 14 Nov. 1985, **854** [CEPEC n.s.,

MBM n.s., NY n.s., RB n.s. (dig. photo)], "arbóreo, 14 m; flores e botões verdes"; – same area: (fr), 3 Jun. 1995, **J. Gomes 252** [BHCB n.s. (dig. photo)]; – Município de Uberaba, BR-262, km 822 à esquerda, ca. 5 km, [ca. 19°47' S, 47°56' W], cerrado, (fr), 30 Oct. 2011, **F.B. Furtado 3** [HUFU n.s. (dig. photo)], "árvore 3 m"; – São Roque de Minas, Parque Nacional da Serra da Canastra, estrada para Sacramento, entrada para a Garagem de Pedras, [ca. 20°14' S, 46°30' W], campo sujo, (fl male), 16 Oct. 1997, **R. Romero et al. 4664** [HUFU n.s. (dig. photo)], "arbusto ca. 0,5 m; cálice e corola verdes; estames creme", – same Parque: Cachoeira Casca D'Anta, na borda do rio São Francisco, [20°19' S, 46°31' W], mata, (fl male), 19 Oct. 1994, **J.N. Nakajima et al. 615** [HUFU n.s. (dig. photo)], "árvore ca. 5 m; cálice e corola esverdeados"; – same area: trilha da parte de baixo da cachoeira da Casca D'Anta, borda da mata, (fl female), 29 Sep. 1995, **1438** [HUFU n.s. (dig. photo)], "árvore ca. 4 m; frutos imaturos esverdeados"; – same area: trilha na escarpa da cachoeira Casca D'Anta, pela portaria no começo da trilha, na área próxima aos quiosques, (yfr), 8 Nov. 2002, **L.R. Lima et al. 199** [CEPEC n.s., HRCB n.s., RB n.s. (dig. photo), SPF n.s. (dig. photo)], "árvore ca. 7 m; frutos verdes"; – same area: trilha para a parte baixa da Cachoeira Casca D'Anta, acesso pela portaria 2, 20°18'31.5" S, 46°31'22.8" W, mata ciliar e floresta estacional, (fl female, yfr), 3 Oct. 2007, **G.O. Romão & C.D. Feliciano 2325** [ESA n.s., RB n.s. (dig. photo), W], "árvore 6 m; cálice verde; corola roxo-esverdeada"; – same area: mata da Casca D'Anta, (fl female), 17 Oct. 1983, **R.S. Ramalho & A.L.P. Mota 2829** [RB n.s. (dig. photo)], "árvore 3 m, 8 cm de DAP; botões florais arroxeados"; – São José do Barreiro, estrada para Babilônia, [ca. 20°22' S, 46°30' W], (fr), 3 Jan. 1998, **R.S. Bianchini & S. Bianchini 1196** [SP n.s., SPF n.s. (dig. photo)], "árvore ca. 4 m; frutos verdes aveludados; tricomas castanhos"; – São João Batista do Glória, estrada para o vale da Gurita, 20°23'32.0" S, 46°35'22.8" W, (fr), 11 Dec. 2008, **C. Urbanetz et al. 535** [UEC n.s. (dig. photo)]; – Capitólio, Pousada da Dona Wanda, caminho para a cachoeira, 775 m, 20°30'19" S, 46°31'5" W, (fr), 6 Nov. 2008, **L.S. Kinoshita et al. 8/489** [HUFU n.s. (dig. photo), UEC n.s. (dig. photo)]; – Cachoeira do Quilombo, 1049 m, 20.2937° S, 46.2511° W [correct is 20°29' S, 46°28' W], mata de galeria, (yfr), 13 Nov. 2011, **J.S. Silva et al. 1034** [UEC n.s. (dig. photo)], "árvore 4 m; frutos imaturos verdes"; – região da Represa de Furnas, estrada depois do Paraíso Perdido em direção ao paredão, 1015 m, 20º36'29" S, 46º20'14" W, beira da mata ciliar, (fr), 8 Dec. 2005, **J.N. Nakajima et al. 4133** [HUFU n.s. (dig. photo)], "árvore ca. 5 m; frutos esverdeados"; – sentido Guapé, 733 m, 20°43'36" S, 46°18'13" W, cerrado, (yfr), 20 Nov. 2008, **R.T. Queiroz et al. 1306** [UEC n.s. (dig. photo)], "árvore 3 m; frutos verdes, com tricomas amarelos"; – Alpinópolis, [20°52' S, 46°23' W], cerrado, (fl male), 20 Oct. 1983, **D.A.C. et al. s.n. (ESAL 2965)** [ESAL n.s., UEC n.s. (dig. photo)], "arbusto 1,3 m; flor verde"; – Itatiaiuçu, parcela P5 dos estudos para o EIA do complexo Serra Azul, 20°12'46" S, 44°28'47" W, cerrado sentido restrito, (fr), 14 Nov. 2011, **E.M. Saddi et al. 555** [K n.s., RB n.s. (dig. photo), SPF n.s.], "árvore ca. 2 m; cálices e frutos verdes"; – Brumadinho, área adjacente à Serra da Moeda, área da mineradora Ferrous, lado direito da BR-040 sentido BH-Rio de Janeiro, 938 m, 20°9'58" S, 44°0.1" W, isolada em pasto; formações de campos rupestres sobre quartzito e canga; florestas estacionais semideciduais, (fr), 10 Jun. 2009, **D.T. Souza & V.T. Giorni 802** [BHCB n.s. (dig. photo)], "árvore 5 m; frutos imaturos verdes"; – Moeda, Serra da Moeda/GR3, 1260 m, 20°17'0" S, 43°57'28" W, em fendas; afloramento gnaisse, (fr), 12 Jan. 2009, **F.F. Carmo 3927** [BHCB n.s. (dig. photo)]; – Retiro das Pedras, 1400 m, 20°19'19.9" S, 43°56'17" W, em canga nodular, (fl male), 20 Oct. 2002, **P.L. Viana 802** [BHCB n.s. (dig. photo)]; – Moeda, Marinho da Serra/GR1, 1135 m, 20°19'48" S, 43°57'31" W, em fendas; afloramento gnaisse, (defl male), 12 Jan. 2009, **F.F. Carmo 3846** [BHCB n.s. (dig. photo)]; – Serra do Belo Vale, BR-135, [ca. 20°23' S, 44°0' W], planta de campo argiloso formando colônia, (defl male), 28 Oct. 1969, **A.P. Duarte 12093** [RFA n.s. (dig. photo)]; – Camargos, [20°16' S, 43°24' W], mata ciliar, (st female), 3 Dec. 1991, **S.C. Pereira s.n.** [E], "árvore 8 m"; – Ouro Branco, áreas adjacentes a vila de Miguel Bournier, 20°25'49" S, 43°46'58" W, cerrado sentido restrito; formações vegetacionais campestres (campo rupestre, campo sujo e limpo), savânicas (cerrados sentido restrito) e florestais (mata de galeria e floresta), (fl male), 16 Oct. 2009, **D.T. Souza 946** [BHCB n.s. (dig. photo)], "árvore 2 m; flores com pétalas verdes"; – près de l'Arraial de la Serra d'Ouro Branco, [ca. 20°30' S, 43°41' W], (fl, yfr), 13 [barely legible: Nov.?] 1884, **A.F.M. Glaziou 15199** [C, K, LE n.s., NY, P 2×]; – Serra do Lenheiro, [ca. 20°30' S, 43°41' W], (defl male), 22 Oct. 1887, **A.F.M. Glaziou 17128** [C, BR, FHO, K, LE n.s., P], "arbuste"; – ad Oliveira, [20°41' S, 44°49' W], (fl male), s.d., **J.B.E. Pohl 455** [F, GH, W 2×]; same collection: **113** [G 2×]; – E.S.A.V. [Escola Superior de Agricultura e Veterinária], Viçosa, [20°46' S, 42°52' W], (defl female? fr?), 3 Dec. 1935, **J.G. Kuhlmann s.n. (VIC 2509)** [VIC n.s. (dig. photo); probably also RB carp. 3254 (dig. photo)]; – Carandaí, Brejão, [ca. 20°58' S, 43°49' W], campo seco, (yfr), 28 Nov. 1946, **A.P. Duarte 709** [MG n.s., RB 2 × n.s. (dig. photos)], "árvore de pequeno porte, de ramos grossos e córtice espessa"; – Prados, 1014 m, 21º2'20" S, 44º9'9" W, campo alterado à beira da estrada, (fr), 11 Dec. 2011, **M. Sobral 14444** [HUFSJ n.s., RB n.s. (dig. photo)], "árvore 2,5 m; frutos imaturos"; – Lavras, near town, [ca. 21°14' S, 44°59' W], edge of virgin forest, (fr), 15 Jan. 1914, **P.H. Dorsett**

et al. 242b [SP]; – Rosário, [ca. 21°14' S, 44°50' W], cerrado, (fr), Dec. 1982, **D.A.C. et al. s.n. (ESAL 4072)** [ESAL n.s., UEC n.s. (dig. photo)], "arbusto 2 m"; – Mun. de Lavras, Serrinha, entrada dá acesso à Retransmissora da CEMIG, [ca. 21°19' S, 45°1' W], (fl male), 7 Dec. 1983, **H.F. Leitão Filho et al. 15354** [UEC n.s. (dig. photo)], "arbusto 1,2 m; flores esverdeadas"; – Lavras, estrada para Poço Bonito, Corredores, [ca. 21°20' S, 44°58' W], (fr), 31 Dec. 2003, **C. van den Berg 1106** [HUEFS n.s. (dig. photo)], "árvore 4 m"; – Município de Itumirim, [21°19' S, 44°53' W], mata ciliar, (fl female), 30 Oct. 1983, **M.L. Gavilanes 995** [ESAL n.s., UEC n.s. (dig. photo)], "árvore ca. 5 m; flor esverdeada"; – Nazareno, Terreno do Zinho, [not located, ca. 21°13' S, 44°36' W], cerrado, (st female), 23 May 1995, **M. Barbosa 2368** [RB n.s. (dig. photo)], "árvore pequena; casca esbranquiçada; frutos redondos"; – Nazareno, BR-265, 931 m, 21°17'20" S, 44°37'32" W, em campo rupestre recuperando-se de queimada, à beira da estrada, (fr), 11 Dec. 2011, **M. Sobral 14635** [HUFSJ n.s., RB n.s. (dig. photo)], "arbusto 2 m; frutos imaturos"; – same data: **14541** [HUFSJ n.s., photo of the living plant!], "arvore 2,5 m; frutos imaturos"; – parcela feita para os estudo do EIA do Mineroduto Bom Sucesso/Itaguaí, 21°18'32" S, 44°35'24" W, cerrado rupestre, (fl male), 1 Oct. 2011, **E.M. Saddi & J.H. Martins 692** [RB n.s. (dig. photo)], "árvore 4 m; flores esverdeadas"; – Carrancas, Toca da Ponte, ca. 3 km da cidade, [21°30' S, 44°39' W], campo cerrado, (fl male), 5 Oct. 1998, **L.S. Kinoshita et al. 98122** [UEC n.s. (dig. photo), W], "arbusto 0,8 m; flores creme-esverdeadas"; – Município de Descoberto, Reserva Biológica da Represa do Grama, [FORZZA et al. (2014): ca. 21°24' S, 42°57' W], na capoeira, (fr), 11 Jan. 2001, **R.M. Castro et al. 104** [CESJ n.s., UEC n.s. (dig. photo)], "arvoreta ca. 1,5 m; folhas discolores; frutos verdes imaturos"; – same data: (flbuds), 9 Dec. 2001, **746** [CESJ n.s., RB 2× n.s. (dig. photos), UEC n.s. (dig. photo)], "árvore 15 m, frequente; botões florais verdes"; – same area: no interior da mata, (fr), 23 Mar. 2003, **L.C.S. Assis & A.S.M. Valente 773** [CESJ n.s., RB 2× n.s. (dig. photos)], "árvore ca. 12 m; folhas discolores e frutos verdes imaturos"; – Itamarati de Minas / São João Nepomuceno, Mineração de Aluminio-CBA, [ca. 21°27' S, 42°52' W], floresta estacional semidecídual, (fr), Jan. 1998, **L.V. Costa s.n.** [BHCB n.s. (dig. photo)]; – Caldas, [21°56' S, 46°23' W], (fl), s.d., **A.F. Regnell 159** [IAN n.s., R]; – same area: (fl female), 14 Sep. 1848, **ser. III 856** [C 2×, R, S 3×, UPS 2×], "arbor alta, habitu Pyri, ramis divaricatis"; – same area: Fazenda (dos Pinheiros) do José Luis Dein, (fl male), 23–30 Feb. 1846, **ser. III 857** [P 2×, S 2×]; – Bom Jardim, [ca. 21°57' S, 44°11' W], (fl male), 10 Oct. 1988, **L. Krieger et al. s.n. (CESJ 24524)** [ESA n.s. (dig. photo), CESJ n.s., SPF n.s. (dig. photo)], "arbusto alto (árvore pequena); flores com as pétalas na face interna, bem escura, quase negra"; – without further data, (fr), 1838, **P. Claussen 68** [P]; (yfr), 1838, **147** [P]; (yfr), 1838, **1063** [BR, NY 2×, P 3×]; (fr), s.d., **s.n.** [BM, G 2×, K 3×, P]; – in camp., (fl male), Sep. 1834, **L. Riedel s.n.** [NY 2×]; in umbr. sylvat., (fl male), Nov. 1834, **s.n.** [NY]; – (fr), 9 Dec. 2008, **C. Urbanetz et al. 523** [UEC n.s. (dig. photo)].

Espirito Santo, Conceição da Barra, Linharinho, Tabuleiro, [ca. 18°32' S, 39°48' W], (fr), 6 Nov. 1996, **O.J. Pereira & O. Zambom 5725** [VIES n.s. (dig. photos)]; – Linhares, Reserva Florestal de Linhares (Reserva Natural Vale), estrada Aceiro Antônio Espelta (Santa Terezinha), próximo à porteira Spelta 01, [ca. 19°7' S, 40°0' W], mata de tabuleiro, (fr), 16 May 1994, **D.A. Folli 2306** [CVRD n.s., W 2×], "árvore 31 m; fuste 28 m; fuste achatado; CAP do fuste 125 cm; diâmetro da copa 5 m; casca áspera; descamação ausente; seiva incolor; fruto imaturo verde escuro, maduro amarelo"; – same area: estrada Farinha Seca, km 1,05, (fl male), 2 Dec. 1994, **2435** [CVRD n.s. (dig. photo), RB n.s. (dig. photo), RUSU n.s., W 2×], "árvore 28 m; fuste 18 m, cilíndrico; CAP do fuste 159 cm; diâmetro da copa 6 m; casca áspera; descamação ausente; seiva incolor; botão e flor verde claro"; – same area: plantado no arboreto com n° W 22, (fl male), 21 Dec. 1990, **1246** [CVRD n.s. (dig. photo), RB n.s. (dig. photo), RUSU n.s., SPF n.s. (dig. photo), W 2×], "árvore 12 m; fuste 6 m, cilíndrico; CAP do fuste 49,5 cm; diâmetro da copa 8 m; casca áspera; descamação ausente; seiva incolor; botão e flor verde escuro"; – same Reserva and area: estrada Gávea, ant. X-2, km 14.163, lado esquerdo, floresta alta; mata de tabuleiro, (fl male), 4 Dec. 1980, **I.A. Silva 222 (222/80)** [CVRD n.s., MG, RBR 2x n.s. (dig. photo), SPF n.s. (dig. photo), W 2×], "árvore ca. 30 m; fuste de ca. 20 m, cilíndrico, DAP 50 cm, CAP 157 cm; diâmetro da copa ca. 8 m; casca áspera; descamação em placas; seiva incolor; com flor e botão verdes"; – same area: estrada Gávea, metros 22000, 48 m, UTM [24K] long. 405009, lat. 7890439 [19°5' S, 39°54' W], (fl male), 23 Nov. 2011, **D.A. Folli 6809** [CVRD n.s. (dig. photo), RB n.s. (dig. photo)], "árvore 32 m; fuste 26 m, cilíndrico; Cap fuste 141 cm; diâmetro copa 10 m; casca áspera; descamação ausente; seiva incolor; botão verde; flor esverdeada"; – Sta. Cruz, Aldeia [= tribal area] Candeias Velha [not located; seems to be Caieiras Velha or Caeiras Velha], [ca. 19°55' S, 40°11' W], mata de tabuleiro secundária, (fr), 26 Mar. 1997, **M.A. de Assis et al. 930** [HRCB n.s., SPF n.s. (dig. photo)], "árvore mais de 15 m; frutos verdes, imaturos".

Rio de Janeiro, Macaé, Carapebus, [22°11' S, 41°40' W], mata, (fl male), May 1991, **A. Souza et al. 3554** [R], "arvoreta"; – Silva Jardim, Fazenda Santa Helena, remanescente próximo a BR-101, 22°31'51" S, 42°20'52"

W, (flbuds), 23 Oct. 2001, **S. de V.A. Pessoa et al. 1214** [K n.s., RB n.s. (dig. photo)], "árvore ca. 14 m, heliófila; folhas discolores verdes; cálice verde e ferrugíneo quando maduro; corola alvo"; – Município de Silva Jardim, Goiabal, [ca. 22°39' S, 42°24' W], mata atlântica, (fr), 27 Jun. 2012, **D. Paskin 112** [RB n.s. (dig. photo)], "árvore 5–6 m, portando flores e frutos em maturação de coloração laranja quando maduros".

Mato Grosso do Sul, Municipality of Coxim, 10 km S of city, [18°35' S, 54°45' W], (fl male), 12 Sep. 1979, **G.M. Christenson et al. 1152** [CEN, MBM, NA n.s., US], "small tree to 10'; flowers green"; – Pantanal subregion of Nhecolândia, Fazenda Nhumirim, ca. 100 km SE of Corumbá, ca. 89 m, 19°14' S, 57°1' W, cerrado on a strip of slightly elevated ground at the edge of a grassy campo, (fl male), 3 Oct. 1985, **J.A. Ratter et al. R5066** [E, K, UB], "small shrub 1 m tall, grows into a large tree; flowers green"; – Mun. de Corumbá, Fazenda Aguassuzinho [= Aguaçuzinho], [ca. 19°12' S, 56°28' W], (defl male, yfr), 14 Oct. 1953, **E. Pereira et al. 328** [MG n.s., RB n.s. (dig. photo)]; – Pantanal da Nhecolândia, Fazenda Rio Negro, [19°33' S, 56°32' W], (st), Sep. 2002, **T.B. Breier 1338** [UEC n.s. (dig. photos)]; – Fazenda Salina, Pantanal do Rio Negro, 19°30' S, 56°10' W, dry forest, (st), 13 Mar. 1987, **B. Dubs 230** [Z], "tree 5 m tall"; – same area: (fl female), 13 Oct. 1987, **410** [E, G, MBM n.s. (dig. photo), Z], "tree 5 m tall"; – same area: (st), 5 May 1988, **738** [Z], "tree 5 m tall"; – rodovia Paraíso/Capim Verde, ca. 19 km W do trevo de Camapuã, ca. 612 m, 19º31'30" S, 53º53'50" W, cerrado denso, (fr), 23 Jan. 2001, **J.R. Pirani et al. 4816** [SPF n.s. (dig. photo)], "arvoreta 1,5 m; frutos imaturos verdes com indumento ferruginoso"; – Campo Grande, estrada de Palmeiras, [ca. 20°28' S, 55°26' W], (fr), 9 Nov. 1977, **I.A. Rodrigues et al. 319** [RB n.s. (dig. photo)], "arbusto, heliófilo; frutos imaturos de coloração verde"; – km 18 BR-419, Nioaque/Anastacio, 21°3' S, 55°46' W, savana arbórea densa, (yfr), 1 Nov. 1980, **J.G. Guimarães 1255** [RB n.s. (dig. photo)], "arbusto 1,5 m; frutos verdes"; – Jardim X Vila Gaúcha, [21°32' S, 56°34' W], (fr), 16 Nov. 1996, **Strang & A. Castellanos 1206** [MBM]; – estrada entre a rodovia BR-060 e Santo Antônio (Mun. Bela Vista), [ca. 22°3' S, 56°7' W], cerrado, (fl male), 18 Oct. 2003, **G. Hatschbach et al. 76483** [HUEFS n.s. (dig. photo), INPA n.s. (dig. photo), MBM n.s. (dig. photo), W], "pequena árvore; flor creme; pétalas com o lado interno vinoso"; – Três Lagoas, a 6 km do Posto São Sebastião, 20°5' S, 51°51' W, savana arbórea aberta; solo: LA/arenosa, (fr), 26 Jan. 1982, **J.G. Guimarães 1374** [RB n.s. (dig. photo)], "árvore 5 m; circunferência de fuste: 50 cm; caule cinza; copa média; frutos jovens de cor verdes"; – Mun. de Selvíria, MS. próx. Ilha Solteira, cerrado do Croa, [ca. 20°23' S, 51°23' W], (yfr), 22–26 Oct. 1984, **O. César et al. 299** [HRCB n.s. (dig. photo)], "arbusto até 2 m, DAP 10 cm; frutos verdes"; – Município de Três Lagoas, margem direita da rodovia, saída para Campo Grande, próximo à rotatória, [ca. 20°49' S, 51°48' W], (fl male), 15 Oct. 2003, **A.S. Cavalcante 351** [RBR 2x n.s. (dig. photo)], "arbusto heliófita; flor bastante odorosa; corola verde; estames brancos"; – estrada entre Bataguaçu e Brasilândia, Fazenda Santa Encarnação, [21°37' S, 52°18' W], cerrado "sensu-stricto"; colinas de arenisca caiuá, (fr), 22 Nov. 1992, **I. Cordeiro et al. 1068** [SP], "arbusto 1,3 m; frutos imaturos verdes"; – Mun. Bataguaçu, rodovia BR-267, [ca. 21°43' S, 52°25' W], cerrado, (st female), 6 Feb. 1975, **G. Hatschbach et al. 35902** [MBM].

São Paulo, Município de Riolândia, Fazenda São Pedro da Mata, [ca. 20°2' S, 49°41' W], (fr), 8 Mar. 1995, **A.G. Nave s.n.** [ESA n.s. (dig. photo)]; – Município de Paulo de Faria, 10 km da cidade em direção a Riolândia, Fazenda Figueira, [ca. 20°3' S, 49°31' W], mata ciliar com brejo adjacente, (fl male), 10 Oct. 1994, **A.L. Maestro & A.M. Silveira 75** [SPF n.s. (dig. photo)], "árvore 6 m; flores verdes"; – Município Icém, Fazenda São Benedito, 22K 693592/7738459 [20°27' S, 49°9' W], floresta ribeirinha, (fr), 26 Jun. 2002, **R.A.G. Viani et al. 307** [ESA n.s. (dig. photo)], "árvore 10 m"; – Município de Guaraci, margens do rio Bocaina, 20º29' S, 49º54' W [correct seems to be: 20º29' S, 48º54' W], (fr), 19 Mar. 1997, **J.A. Pastore et al. 757** [SPF n.s. (dig. photo), SPSF n.s.], "árvore 8 m; frutos verdes"; – Tanabi, Faz. N. S. Aparecida, [ca. 20°38' S, 49°39' W], (fr), 30 Jun. 1994, **J.Y. Tamashiro et al. T 316** [HRCB n.s. (dig. photo), SPF n.s. (dig. photo), UEC n.s. (dig. photo)], "árvore 13 m; frutos maduros verde-amarelado"; – entre Ipiguá e Mirassolândia, 20°39' S, 49°27' W, terra roxa/média, (fr), 20 May 1982, **J.G. Guimarães 1497** [RB n.s. (dig. photos)], "árvore 11 m; circunferência do fuste 80 cm; caule cinza (fissuras superficiais); frutos jovens verdes, amarelo quando maduros e marrom quando secos"; – São José do Rio Preto, bosque municipal, [20°47' S, 49°21' W], (fl male), 25 Sep. 1985, **Brognaro & Fonseca 124** [HRCB n.s. (dig. photo)], "árvore ca. 6 m"; – same area: (fl male), 14 Oct. 1962, **P.N. Camargo & G. de Marinis 36** [SP n.s. (dig. photo)], "arbusto; flores esverdeadas"; – Cerrado Barra Funda, [ca. 20°47' S, 49°21' W], (fl male), s.d., **P.N. Camargo & G. de Marinis 63** [SP n.s. (dig. photo)], "arbusto 2 m; flores verdes, pentâmeras ou tetrâmeras"; – Município Igarapava, Fazenda Várzea Alegre, 23K 213808 7785921 [20°0' S, 47°44' W], (fr), 17 Jun. 2002, **R.A.G. Viani et al. 262** [ESA n.s. (dig. photo)], "árvore 6 m"; – Município Pedregulho, Estreito, entroncamento da SP-334 para Estreito, 23 km, 746 m, 20°11'56" S, 47°18'38" W, campo pedregoso de cerrado; solo pedregoso, (yfr), 22 Nov. 2005, **T.B. Cavalcanti et al. 3658** [CEN n.s. (dig. photo), SPF n.s. (dig. photo), W], "árvore 3 m,

tricomas levemente ferrugíneos; frutos imaturos verde-amarelados"; – a 2 km oeste de Jeriquara, [20°19' S, 47°37' W], cerrado com ca. 5 m de altura, (fr), 16 Mar. 1964, **J. Mattos & H. Bicalho 11518** [SP n.s. (dig. photo)], "árvore 3,5 m; frutos de cor cinza-amarelada, maduros, grandes e muito pilosos"; – Orlândia, Faz. Vale do Rosário, [ca. 20°40' S, 47°57' W], (fl male), 2000, **F.T. Farah 1632** [ESA n.s. (dig. photo), RB n.s. (dig. photo)]; – Campo Alegre, [20°47' S, 47°17' W], campo cerrado e arenoso, (fl male), 25 Sep. 1940, **J.F. Toledo & A. Gehrt s.n.** [SP n.s. (dig. photo), US], "arbusto; flor cor de vinho"; – Araraquara, Lageado, [ca. 21°47' S, 48°10' W], cerrado, (st), 12 Apr. 1899, **A. Loefgren CGG 4337** [SP n.s. (dig. photo)]; – NNW São Carlos, 701 m, 21°54.485' S, 47°56.553' W, em uma área que inicialmente era uma pastagem, e depois foi fechada para que houvesse a regeneração natural da mata nativa, (fl female, fr), 2010, **R. Baião** [photos of living plants via email 31.7.2013]; – Parque Ecológico de São Carlos, [21°59' S, 47°53' W], cerrado, (fr), 8 Dec. 1993, **P.H.P. Ruffino & M.A. Assis 158** [HRCB n.s. (dig. photo)], "arbóreo 2,5 m; fruto verde estriado"; – Brotas, Horto Santa Fé "1", 22°15'54" S, 48°2'32" W, transição cerradão mata ciliar, (st), 28 Aug. 2002, **B.Z. Gomes 149** [UEC n.s. (dig. photo)], "altura 5,5 m"; – Itirapina, rodovia Washington Luís, 22°10'9.3" S, 47°47'1.4" W, cerrado, (fl male), 28 Sep. 1993, **K.D. Barreto et al. 1302** [ESA n.s. (dig. photo), SPF n.s. (dig. photo), W], "arbusto 1,5 m; tronco rugoso; flores verdes"; – Estação Experimental e Ecológica de Itirapina, Cerrado do Valério, 22°12' S, 47°51' W, cerrado, (fr), 6 Feb. 2008, **J.Y. Tamashiro & F.A.M. Santos 1475** [UEC n.s. (dig. photo)], "arvoreta 2,5 m; frutos imaturos"; – Mun. de Itirapina, Reserva do Instituto Florestal, 22°15' S, 47°49' W [correct is ca. 22°13' S, 47°51' W], cerrado, (fr), 13 Feb. 1989, **L.P. de Queiroz 2251** [HUEFS], "arbusto de ca. 2 m, com folhas cartáceas; tronco rugoso; frutos imaturos verdes"; – Município de Itirapina, [ca. 22°13' S, 47°54' W], campo/cerrado, (fl male), Oct. 1995, **V.T. Rampin 829** [HRCB n.s. (dig. photo), HUEFS n.s. (dig. photo), RB n.s. (dig. photo), SPF n.s. (dig. photo)], "arbusto; flores esverdeadas"; – same area: (fr), 6–12 Feb. 1992, **J.Y. Tamashiro et al. 27064** [UEC n.s. (dig. photo)]; – same area: (fl male), 8 Jan. 2007, **T.B. Flores 234** [ESA n.s., UFRN n.s. (dig. photo), W]; – same area: campo natural, (fl male), 21 Sep. 1984, **O. Cesar & A. Furlan 230** [HRCB n.s. (dig. photo)], "arbusto"; – Cerrado de Itirapina, [ca. 22°13' S, 47°54' W], (fl male), Oct. 1983, **O. Cesar s.n. (HRCB 3677)** [HRCB n.s. (dig. photo)], "arbustiva até 2 m; flores verdes"; – Município de São Carlos, estrada entre Itirapina e a Represa do Lobo [Broa], próximo ao pedágio municipal, [ca. 22°13' S, 47°54' W], cerrado, (fl male), 10 Nov. 1995, **V.C. Souza et al. 9381** [ESA n.s. (dig. photo)], "arbusto ca. 2 m; frutos creme"; – Mun. de Itirapina, área de entorno da represa do Lobo, 22°15' S, 47°49' W [correct is ca. 22°13' S, 47°54' W], cerrado, (fl male), 23 Sep. 1989, **L.P. de Queiroz 2410** [HUEFS n.s. (dig. photo), W], "arvoreta de ca. 2 m, com tronco suberoso; folhas jovens membranáceas; flores com odor de jasmim com pétalas carnosas verdes tornando-se depois atropurpúreos"; – rodovia Brotas/Itirapina, no entroncamento para Itaqueri, [22°16' S, 47°53' W], campo cerrado; solo arenoso, (fl male), 24 Sep. 1991, **L.P. de Queiroz & Salino 2575** [HUEFS, SPF n.s. (dig. photo)], "arbusto de ca. 1 m; flores verdes"; – ao lado da rodovia, São Pedro/Itirapina, 820 m, 22º17'19.45" S, 47º54'7.64" W, cerrado, (fl male), 16 Oct. 2015, **G.D. Colletta et al. 2202** [ESA n.s., RB n.s. (dig. photo)], "árvore 1,5 m; caule suberoso; cálice verde com indumento ferrugíneo; corola verde"; – same data but: 813 m, 22º17'35" S, 47º54'69" W, cerrado, (fr), 4 Oct. 2015, **2257** [ESA n.s., RB n.s. (dig. photo)], "árvore 5 m; frutos imaturos verdes"; – Itirapina, estrada de Graúna, [ca. 22°18' S, 47°44' W], (fr), 2 Feb. 1993, **F. de Barros 2523** [SP n.s. (dig. photo)], "arvoreta ca. 1,5 m; fruto imaturo verde-ferrugíneo"; – Corumbataí, [ca. 22°13' S, 47°37' W], cerrado, (fl male), 31 Aug. 1984, **S.N. Pagano 623** [HRCB n.s. (dig. photo)]; – Jardim Botânico de Bauru, [22°21' S, 49°1' W], cerradão, (fl male), 27 Oct. 1997, **M.H.O. Pinheiro 551** [HRCB n.s. (dig. photo), SPF n.s. (dig. photo)], "arvoreta de 3 m; flores esverdeadas"; – Agudos, mata ao lado da Faz. São João do Guarantã, [ca. 22°28' S, 49°0' W], floresta estacional semidecidal, (fr), 15 May 2012, **G.D. Colletta & F.M. Alves 637** [ESA n.s., RB n.s. (dig. photo), W], "árvore 6 m; frutos maduros amarelados, adocicados"; – Município de Águas de Santa Bárbara, Estado Ecológico de Santa Bárbara, [22°48' S, 49°13' W], cerrado, (fl male), 9 Oct. 1990, **J.A.A.M. Neto et al. 663** [UEC n.s. (dig. photo)], "arvoreta; botões esverdeados"; – same Município: ca. 10 km da cidade em direção a Lençóis, próximo à entrada da Fazenda Água do Bugre, [ca. 22°47' S, 49°11' W], cerrado, (yfr), 19 Dec. 1995, **V.C. Souza & J.P. Souza 9552** [ESA n.s., SP n.s. (dig. photo)], "arvoreta ca. 4 m; frutos imaturos verdes"; – Pratânia, Reserva Particular Fazenda Palmeira-da-Serra (SP-255, rodovia João Mellão, km 218), coletado no interior do fragmento, 22°48'50" S, 48°44'35" W, cerrado s.s., (fr), 12 Jan. 2004, **M.N. Ishino 97** [BOTU n.s. (dig. photo)], "árvore 2 m; folhas grandes largas, pilosas em ambas faces; frutos verdes pilosos, arredondados imaturos, 4 cm diâmetro"; – same Reserva: 22°48'50.2" S, 48°44'35.8" W, (fl male), 17 Jul. 2002, **C.J. Campos & K.A. Campos 77** [BOTU n.s. (dig. photo via "Biota Vernissage Version 1.0")], "shrub 0.7 m tall; flowers green"; – same: (fr), 3 Mar. 2002, **S.M. Carmello-Guerreiro et al. 101** [UEC n.s. (dig. photo)]; – same: (st), 21 Jul. 2006, **Clemente BOTUw 1525** [BOTU n.s. (dig. photo of a stem transect with corky bark)]; – Município de Botucatu, à margem da rodovia João Melão, que liga São Manuel à Avaré, no km 296, 22°34' S, 48°44'19"

W [correct seems to be: ca. 22°53' S, 48°45' W], campo cerrado, (fl male), 25 Sep. 1986, **L.R.H. Bicudo et al. 1475** [SP n.s., UEC n.s. (dig. photo)], "1 m; cálice verde; corola verde"; – Anhembi, Fazenda Santa Ângela, 22°42'24.8" S, 48°18'16.7" W, cerrado, (fr), 15 Dec. 1994, **K.D. Barreto et al. 3429** [ESA n.s. (dig. photo), SPF n.s. (dig. photo)], "arvoreta 3 m; frutos imaturos verdes"; – Município de Botucatu, à margem da rodovia municipal (estrada do Roberto), que liga Vitoriana ao Rio Bonito Campo e Náutica, ca. 5 km de Vitoriana, Fazenda Gold Farm, 22°48' S, 48°17'5" W [correct seems to be: ca. 22°44' S, 48°22' W], (fr), 18 Mar. 1986, **L.R.H. Bicudo et al. 787** [UEC n.s. (dig. photo)], "2 m; frutos verdes"; – same data: (fl male), 16 Oct. 1986, **1592** [HRCB n.s. (dig. photo)], "1 m; cálice verde; corola verde, sem odor"; – 18 km N of Botucatu (14 km E of São Manuel), along the São Manuel/Piracicaba highway, near ex-railway station "13 de maio", ca. 550 m, 22°45' S, 48°25' W, cerrado vegetation, xeromorphic tree & scrub woodland form, on gentle slope, (yfr), 12 May 1950, **I.S. Gottsberger 179** [ULM n.s., WU], "tree to 3 m tall; flowers greenish"; – all with the same data: (fl male, fr), 29 Oct. 1970, **746** [BOTU n.s., FHO 3×, ULM n.s., W]; (st), 20 May 1971, **2-8-20571** [ULM]; (defl male), 30 Sep. 1971, **2096 (1054-30971)** [BOTU n.s., ULM]; (fl female), 2 Oct. 1971, **32R-21071** [ULM n.s., WU], "tree to 3 m tall; flowers greenish"; (fl male), 14 Oct. 1971, **2096 (12R-141071)** [BOTU n.s., NY, W 2×]; (fl male), 28 Sep. 1972, **2096 (281R-28972)** [BOTU n.s., ULM]; (fl female), 5 Oct. 1972, **13-51072** [BOTU n.s., NY, UB, ULM n.s., W], "tree 3 m tall, 30 cm circ."; (fl), 19 Oct. 1972, **2096 (129R-191072)** [ULM], "lower than 1 m"; (defl male), 19 Oct. 1972, **2096 (128R-191072)** [BOTU n.s., ULM]; – Botucatu, Rubiao Junior, behind the school, 900 m, 22°54'0" S, 48°23'0" W [correct seems to be: 22°53' S, 48°29' W], campo cerrado, (fl), 4 Oct. 1969, **G. Gottsberger & I. Gottsberger 113-41069** [ULM]; – Mogi Guaçu, Fazenda Campininha [= Reserva Biológica de Mogi Guaçu] próximo de Pádua Sales, [according to MANTOVANI & MARTINS (1988): 22°15–16' S, 47°8–12' W], (fl female), 26–27 Oct. 1955, **M. Kuhlmann 3698** [S, SP n.s., US]; – all the following from the same locality: cerrado, (yfr), 23 Oct. 1969, **J. Mattos 10625** [SP n.s. (dig. photo)], "arbusto 0,8 m; frutos imaturos muito pilosos"; – cerradão, (fl male), 18 Oct. 1976, **P.E. Gibbs & H.F. Leitão Filho 3362** [F, NY 3×, UEC n.s. (dig. photo)], "arvoreta 2 m; pétalas esverdeados"; – (fl male), 28 Aug. 1977, **R. Parentoni & H.C. de Moraes 5996** [UEC n.s. (dig. photo)], "arbusto 1,5 m; flores creme, externamente ferruginosas"; – 650 m, (fl male), 3 Oct. 1977, **S.L. Jung et al. 90** [COL n.s. (dig. photo), SP n.s., SPF n.s. (dig. photo)], "árvore ca. 3–4 m; corola verde"; – (fl male), 22 Sep. 1980, **E. Forero et al. 8245** [COL n.s. (dig. photo), RB n.s. (dig. photo), SP n.s.], "árbol 2 m; flores verdes"; – (fl male), 16 Nov. 1977, **M. Sakane 599** [SP n.s. (dig. photo)]; – (fr), 11 Feb. 1980, **M.R.F. Melo & S.A.C. Chiea 185** [SP n.s. (dig. photo), SPF n.s. (dig. photo)], "arbusto 3,5 m; frutos verdes"; – (fl male), 16 Sep. 1980, **W. Mantovani 1023** [HCF n.s., SP n.s. (dig. photo), SPF n.s. (dig. photo)], "arvoreta 2,5–3 m; comum presença de galha"; – (fl male), 16 Oct. 1980, **1202** [SP n.s. (dig. photo)], "arbusto 2–3 m; pétalas marrons na face interna"; – (fl male), 10 Oct. 2001, **M.S. Dechoum 18** [UEC n.s. (dig. photo)], "arvoreta 1 m"; – same data: **19** [UEC n.s. (dig. photo)], "arvoreta 1 m"; – Mogi Guaçu, [ca. 22°22' S, 46°57' W], (fl male, female), 15 Oct. 1942, **M. Kuhlmann s.n.** [S, SP n.s. (dig. photo), US]; – Mogy-Guassu [= Mogi Guaçu], caminho Mogy-mirim [Mogi Mirim], [22°24' S, 46°57' W], cerrado, (fr), 12 Jul. 1889, **A. Loefgren 48** [C], "arbusto de 3 m"; – same data: capoeira/cerrado, (yfr), **1298** [SP n.s. (dig. photo)]; – Mogi Mirim, [ca. 22°26' S, 46°58' W], cerrado, (defl female), 27 Feb. 1941, **A.P. Viégas & A.S. Costa s.n. (SP 48674)** [SP n.s. (dig. photo)]; – Rio Carapitinguí, 15 km aquém de Mogi Mirim, [ca. 22°26' S, 46°58' W], campo, (fl male), 15 Oct. 1931, **A. Gehrt s.n.** [S, SP n.s. (dig. photo), SPF n.s. (dig. photo), US, WU 2×], "arbusto; flores esverdeadas"; – Morro Pelado, [ca. 22°27' S, 46°37' W], campo (beira capão), (st), Jan. 1901, **G. Edwall CGG 5789** [SP n.s. (dig. photo)], "arbusto pequeno; cálice 3–4–5 part."; – Sto. Antonio da Posse, ± 20 km from Campinas on the road to Moji-Mirim [Mogi Mirim], [ca. 22°36' S, 46°55' W], low cerrado, (fl male), 13 Nov. 1978, **J.A. Ratter et al. R4307** [E, MBM n.s. (dig. photo)], "tree 4 m tall"; – Campinas, Jd. Santa Rosa, [22°56' S, 47°10' W], (fr), 8 Mar. 1995, **D. Santin & R. Cielo Filho 31054** [UEC, W]; – prope Itú + prope St. Paulo, [23°16' S, 47°18' W], in camp. siccis, (fl male), Nov. 1825, **L. Riedel 86** [MO, NY 3×]; – Fazenda Cachoeira entre Bofete e Guareí, ca. 800 m, [ca. 23°14' S, 48°13' W], cerrados arenoso-ácidos, (fr), 24 Jan. 1945, **M. Kuhlmann 1300** [SP n.s. (dig. photo)]; – Angatuba, Reserva Florestal, [23°24' S, 48°23' W], (fl male), 7 Dec. 1968, **M. Emmerich 3285** [R], "arbusto 1,5 m; flores esverdeadas"; – Itararé, [ca. 24°7' S, 49°21' W], in campo, (st), 16 Apr. 1910, **P.K.H. Dusén 9654** [GH, IAN n.s., K, MICH, NY, S]; – same data but: in campo cerrado, (fl male, fl female), 7 Nov. 1910, **10580** [GH n.s., NY 2×, S 2×]; – Município de Itararé, rodovia SP-258 junto ao Rio Verde, [24°5' S, 49°12' W], cerrado, (fr), 8 Apr. 1989, **C.A. de M. Scaramuzza & V.C. Souza 43** [ESA n.s. (dig. photo)], "arbusto 1,5 m; frutos imaturos verdes"; – São Paulo, savana arbórea aberta; solo argilo-arenoso, (fl male), 17 Oct. 1979, **O. Lima 11** [HRB n.s., MBM n.s. (dig. photo)], "árvore 2 m; fuste 8 cm; copa 1,5 m; caule marrom; folhas tomentosas; botões verde-escuro".

Paraná, Jaguariaíva, Parque Estadual do Cerrado, 24°10' S, 49°39' W, (fl male), 11 Nov. 2011, **D.C. Imig et al. 26** [NY n.s. (dig. photo), UPCB n.s.], "flores brancas com detalhes lilases"; – same Parque: 24°14' S, 49°41' W [correct is 24°10' S, 49°39' W], (fl male), 14 Nov. 1992, **A.C. Cervi & A. Dunaiski 3841** [NY], "arbusto 1 m; flores esverdeadas"; – same locality: cerrado, (fl male), 24 Oct. 1998, **A.C. Cervi et al. 6511** [P n.s. (dig. photo), UPCB n.s.], "arvoreta ca. 3 m; flores esverdeadas"; – Mun. Jaguariaíva, Fda. Cajuru, [ca. 24°10' S, 49°39' W], campo, (fl male), 24 Nov. 1980, **G. Hatschbach 43376** [MBM], "subarbusto 1 m; flor creme-esverdeada"; – "Morungava praedium in vicinia Itararé oppidi situm in campo cerrado", 740 m, [ca. 24°7' S, 49°24' W], (defl female, yfr), 25 Jan. 1915, **P.K.H. Dusén 16501** [S]; – same data: (st female), 16 Feb. 1915, **16689** [NY]; (fl female, yfr), **16689a** [GH 2×, K, L, MICH, MO, P, S 2×]; – Mun. Senges, Rio do Funil, [24°8' S, 49°22' W], cerrado, (fl female), 7 Oct. 1971, **G. Hatschbach 27146** [C, CTES, HBG, MBM, MICH, NY, RFA n.s., S, SI n.s., UC, Z], "árvore; flor verde". – Brazil, without data, (st female), 2011, **D. Paskin 40** [RB n.s. (dig. photo)]; – (fl male), s.d., **J.B.E. Pohl s.n.** [W]; – (st), s.d., **F. Sellow s.n.** [F (fragm. ex B)].

Bolivia, Santa Cruz, Velasco Province, Parque Nacional Noel Kempff Mercado, [SSE] Lago Caimán, 540 m, 13°22'6" S, 60°32'73" W [correct is ca. 13°38' S, 60°53' W], farallón arriba del campamento, afloramiento de arenisca, (fr), 15 Jan. 1997, **T. Killeen et al. 8200** [MO n.s., USZ n.s. (dig. photo)], "árbol de 4 m; con bayas verdes"; – Bahia Caimán (subiendo hacia la serranía, punto Antena, punto Mono), [ca. 13°38' S, 60°53' W], bosque semideciduo con algunos elementos de cerrado; rocas grandes; suelo arenoso, (fr), 14 Apr. 1995, **B. Mostacedo & H. Gonzales 3256** [NY, USZ n.s.], "árbol 4–5 m; fruto verde inmaduro"; – same Parque: Las Torres, 200 m, 13°39'20" S, 60°49'8" W, pampa inundada; substrato aluvio reciente-fluviátil, (fr), 29 Nov. 1993, **A. Jardim & R. Quevedo 200** [CTES, LPB, USZ n.s. (dig. photo)], "árbol de 5 m; hojas verde oscuro en la haz y verde claro en el envés con nervaduras amarillas"; – Campamento La Torre, 250 m, 13°39'30" S, 60°49'12" W, bosque deciduo, (fl), 2 Oct. 1993, **R. Quevedo et al. 2338** [CTES, F n.s. (dig. photo), MO, NY, USZ n.s. (dig. photo)], "arbolito 4 m; corteza gris oscura; flores verde amarillenta; pétalos pubescentes, algo incurvado"; – same Parque: Campamento Las Torres, alrededores del campamento en las márgenes del Río Iténez, 24 km S de Flor de Oro, ca. 250 m, 13°39' S, 60°48' W, bosque hasta 10 m de altura con elementos florísticos del cerrado, (yfr), 7 Oct. 1995, **I.G. Vargas C. et al. 4104** [F n.s. (dig. photo), MO, USZ n.s.], "arbolito 5 m, 15 cm dap; corteza externa crema fisurada, corchosa; frutos inmaduros pilosos verdosos"; – Prov. Guarayos, Perseverancia, 14°44' S, 62°47' W, vegetación secundaria, (fr), 20 May 1991, **P. Bettella PBE-139** [FHO, NY n.s.], "4 m, 7 cm diam.; fruta amarillenta cundo madura"; – Prov. Ñuflo de Chávez, Perseverancia, vecindad del Rio Negro, tributario del Río Baures, a 75 km S del límite del Dpto. de Beni y 150 km E del Río Paragua, 200 m, 14°38' S, 62°37' W, una mezcla de bosque de lomas con bosque pantanoso abierto de los valles, (fr), 12 May 1991, **M. Peña & R. Foster 50** [F n.s. (dig. photo), LPB, NY, USZ n.s. (dig. photo)], "arbolito 5 m; frutos verde, maduro amarillo"; – Prov. Velasco, Campamento La Toledo, a 1000 m al E de la casa, yendo hacia el Rio Paragúa, 160 m, 14°42' S, 61°9' W, pampa termitera; suelos areno-arcillosos; pampa sartenejal, (fr), 13 Jun. 1994, **R. Guillén & V. Choré 1875** [USZ n.s. (dig. photo)], "árbol de 4 m; corteza gris cenizo, interna rosado crema; haz verde y envés verde amarillo; frutos amarillos"; – same locality: (fl female), 21 Oct. 1994, **R. Guillén & R. Choré 2419** [F n.s. (dig. photo), MO, NY, USZ n.s.], "árbol 12 m; corteza gris, interna guinda; hojas jóvenes; flores en botones verdes"; – same data: (fl male), **2425** [F n.s. (dig. photo), MO, NY, USZ n.s.], "árbol 16 m; hojas jóvenes; flores en botones verdes"; – same Campamento: a 1500 m al SW del la casa, yendo hacia el empalme del camino maderero, 180 m, 14°42' S, 61°9' W, bosque de cusi (*Orbignya phalerata* [= *Attalea speciosa*]); suelos arenosos con presencia de limo, (fr), 12 Jun. 1994, **R. Guillén & V. Choré 1855** [MO, USZ n.s. (dig. photo)], "árbol 17 m; corteza de color cenizo café, interna rosado crema; tallos jóvenes y hojas con pubescencia amarillenta; haz verde y envés verde amarillo, nervadura amarilla sobresaliente"; – same data: **1867** [MO, USZ n.s. (dig. photo)], "árbol 12 m; corteza ceniza, interno rojo con poco exudado; hojas con la haz verde lustroso y envés verde blanco; frutos verdes y amarillando"; – Velasco Province, Reserva Ecológica El Refugio, a 800 m al E del campamento Toledo sobre el camino al Río Paraguá, 180 m, 14°42'23.7" S, 61°8'58.8" W, pampa termitera; suelo arenosos, (fr), 17 May 1995, **R. Guillén & R. Choré 3735** [F n.s. (dig. photo), MO, NY, USZ n.s.], "árbol 8 m; frutos verdes"; – puesto La Toledo, a hacia el sur de la casa, 200 m, 14°42'18" S, 61°9'37" W, bosque ribereño estacionalmente inundado, (fr), 21 Jan. 1997, **M. Castro et al. 9** [MO n.s., USZ n.s. (dig. photo)], "árbol 8 m; corteza externa lisa; hojas con el envés pubescente; fruto verde axilar con puntos amarillos"; – same data but: 7 km al NO de la casa, (fr), 24 Jan. 1997, **44** [G, MO n.s., SCZ n.s., USZ n.s. (dig. photo)], "árbol 10 m; corteza externa e interna de color café oscuro; frutos de color verde oscuro"; – a 1400 m al SW del campamento Toledo sobre el camino La Plata, 200 m, 14°42'30.7" S, 61°10'29.8" W, bosque subdeciduo dominado por cusi [= *Attalea speciosa*]; suelos arenosos con presencia

de limo, (st female), 12 May 1995, **R. Guillén & R. Choré 3624** [MO, USZ n.s.], "árbol 18 m; frutos verdes"; – Campamento El Refugio, a 1400 m al SW de la casa yendo hacia la pampa de Las Islas, 150 m, 14°47'9" S, 61°2'52" W, en una pampa húmeda anegada temporalmente con aguas del río Paraguá, (fr), 21 May 1994, **R. Guillén & R. Choré 1456** [F n.s. (dig. photo), MO, NY, USZ n.s.], "árbol 9 m; corteza ceniza con manchas blanco verduzcas, interna café guindo madera con franjas negras; hojas de haz verde oscuro y envés verde claro pubescente; frutos verdes y amarillos"; – a 2500 m al N del refugio, 160 m, 14°45'44" S, 61°2'53" W, bosque ribereño; suelo arcillo limoso, (fr), 31 May 1994, **R. Guillén & S. Coria 1610** [MO, USZ n.s. (dig. photo)], "árbol 4 m; hojas con haz verde oscuro y el envés verde claro; frutos verdes con puntos blancos"; – same Campamento: a 7 km E de la casa, hacia la serranía de Caparuch, 150 m, 14°44'19" S, 61°0'17" W, pampa sartenejal anegada temporalmente; suelo areno limosos, (fr), 8 Jul. 1994, **R. Guillén & S. Coria 2119** [F n.s. (dig. photo), MO, USZ n.s. (dig. photo)], "árbol 15 m; corteza gris negruzca, interna rosado rojo; hojas con la haz verde oscuro y el envés verde amarillo; frutos verdes con el cáliz persistente"; – a 4 km del campamento, sobre el camino a la Serranía de Caparúch, en el potrero n° 2, 180 m, 14°44'11.4" S, 61°0'10.2" W, potrero; en una pampa termitera; suelos arcillo-arenosos, (fr), 4 May 1995, **R. Guillén & V. Roca 3499** [CTES, F n.s. (dig. photo), MO, NY n.s., USZ n.s. (dig. photo)], "árbol de 9 m; frutos amarillos y verdes, cubiertos con pubescencia"; – Parque Nacional Noel Kempff Mercado, Los Fierros 1, 300 m, 14°36'25" S, 60°51'23" W, campo cerrado, (fl male), 14 Oct. 1994, **T. Killeen et al. 6770** [F n.s. (dig. photo), MO, NY, USZ n.s.], "árbol 3 m; corteza corchosa y exfoliada; flores verdes con pétalos libres y contortas"; – same Parque: campamento Las Gamas, 850 m, 14°48'14" S, 60°23'59" W, campo rupestre, (fr), 13 Jun. 1994, **L. Arroyo et al. 808** [F n.s. (dig. photo), MO, NY, USZ n.s.], "árbol 8 m; frutos amarillos en maduro"; – Prov. Guarayos, Reserva de Vida Silvestre Rios Blanco y Negro, Campamento de la Monita, 18 km al SW del Río San Martín, 126 m, 15°3'20.6" S, 61°56'23.2" W, bosque alto de arroyo secundario con mara (*Swietenia macrophylla*) y cedro (*Cedrela fissilis*), (fr), 7 Sep. 1993, **I.G. Vargas et al. 2755** [USZ n.s. (dig. photo)], "arbolito 8–10 m y 10 cm dap; corteza externa gris, interior rosada, olor fuerte; copa circular, irregular; hojas de haz verde oscuro, envés verde claro; frutos inmaduros verdes, maduros amarillos"; – Prov. Velasco, Hacienda San Roque, parcela Monte Verde, a 15 km al NO de la Hacienda, 288 m, 15°0'37" S, 61°7'42" W, bosque siempreverde, húmedo estacionalmente; suelos arenosos con presencia de limo, arcilla y material orgánico, (st), 21 Aug. 1996, **R. Guillén et al. 4544** [USZ n.s. (dig. photo)], "9 m; corteza gris, interna crema"; – Velasco Province, Hacienda Acuario a 24 km de San Jose de Campamento, camino hacia el empalme a Piso Firme, 300 m, 15°14'46" S, 61°14'34" W, (fr), 29 Apr. 1996, **J. Guillén et al. 6** [G, MO n.s., USZ n.s.], "árbol 15 m; corteza café, interior rosado; frutos verdes"; – Velasco Province, inmediaciones del Parque Nacional Noel Kempff Mercado, a 24 km al W de la comunidad de San José de Campamento, sobre el camino hacia el empalme a Piso Firme, 300 m, 15°14'46" S, 61°14'34" W, bosque semideciduo; suelos arenosos con afloramientos graníticos, (fr), 20 Apr. 1996, **R. Guillén et al. 4252** [USZ n.s. (dig. photo)]; – Ñuflo de Chávez, Est. Las Madres, curiche by front gate, 500 m, 16°0' S, 62°0' W, eroded tertiary planation surface overlying precambrian shield; mosaic of semideciduous forest, wooded savanna and savanna wetland, (st), 20 May 1986, **T. Killeen 2051** [LPB, NY, USZ n.s. (dig. photo)], "small tree, tortuous, 2.5 m, DBH 15 cm; bark very corky; leaves coriaceous"; – Prov. Ñuflo de Chávez, localidad "El Carmen", a 4 km del camino que va a Fortaleza, 750 m, 16°26'3.8" S, 62°2'30.3" W, en una colina con bosque mediano (cerrado); suelos arcillosos, con presencia de piedras y afloramientos de roca, (fr), 11 Dec. 1994, **R. Guillén 2798** [MO, USZ 2× n.s. (dig. photos)], "arbusto 1,5 m; frutos verdes"; – Prov. Chiquitos, camino Roboré/San José, a 49 km W de Roboré, [ca. 18°5' S, 60°5' W], vegetación de cerrado; suelo rojizo, arenoso, (fr), s.d., **B. Mostacedo & R. Abbott 2875** [MO, USZ n.s.], "subarbusto; fruto verde inmaduro"; – same area and collectors: Santiago, 8 km camino Santiago/Roboré, 18°20'21" S, 59°40'32" W, cerradão, con árboles hasta 15 m de altura; suelo rojizos superficiales con piedras, (fr), 1 Feb. 1995, **2746** [NY, USZ n.s.], "arbusto 1,5–2 m; hojas de haz verde brillante, envés blanquecino; fruto verde inmaduro"; – Santiago, near airstrip, 600 m, 18°20' S, 59°35' W, cerrado, (fl male, yfr), 1 Nov. 1991, **A.H. Gentry & R. Foster 75465** [F n.s. (dig. photo), MO, NY, USZ n.s. (dig. photo)], "shrub 1.5 m; fruits green".

Paraguay, Amambay, Sierra de Amambay in campis "Cerrados" Esperansa, [22°19' S, 56°9' W], (fl male), Oct. 1907–1908, **T. Rojas** [**E. Hassler**] **10675** [A, BM, C, FHO, G 7×, K, LIL n.s. (dig. photo), MICH, MO, NY, P 3×, RB n.s. (dig. photo), S, UC, US, W], "frutex 1–4 m; corolla viridis"; – Parque Nacional de Cerro Corá, cerca de la casa forestal, [according to L. Ramella (G): 22°38' S, 56°2' W], matorral seco; suelo arenoso, (fl male), 4 Oct. 1980, **J.F. Casas & J. Molero FC 4063** [NY], "40 cm de altura. – Canendiyu, in altoplanitie et decliviis Sierra de Maracayú, "in silva aprica campestris Ipé hú" [according to L. Ramella (G): Ypé Jhu = black goose, 23°54' S, 55°27' W], (fl female), Oct. 1898–1899, **E. Hassler 5087** [BM, G 7×, K, NY, P 3×, S, UC, W], "arbor 3–4 m, d. [diámetro] 0,3–0,4 m; petala flovovirentia".

***Diospyros ovalis* HIERN**, Trans. Cambridge Philos. Soc. 12 (1): 248 (1873); – [fig. 7, 16–17].

Protologue: "Brazil, Pernambuco, sandy open places, Rio Preto, September".

Typus: Brasil, Bahia (border area with Tocantins), [BM:] "sandy campos, Dist. of the Rio Preto, Prov. of Pernambuco", [somewhere around 11°12' S, 46°10' W], (fl male), Sep. 1839, **G. Gardner 2813** [lectotype (here designated): BM (see fig. 16), isotypes: B (destroyed, photo F 4369 at G, GH, MICH, MO, NY, US), E, F (fragm. ex B), G 2×, GH, K 2×, MG n.s. (fragm., dig. photo), NY, P 2×, W 2× (fig. 17b)], "shrub 2–3 ft.; flowers green".

Note: Gardner travelled from Piauí southwards and reached and crossed the Rio Preto on September 21th 1839. This area was at that time still part of the state of Pernambuco. He went then westwards along the Rio Preto to the border area with Goiás (now Tocantins) and reached the Indian mission called "Duro" where he stayed for two weeks till the 13th of October (GARDNER 1848). According to URBAN (1906), this place was called "Douro" [simplification of "D'ouro"] and he located it in the former federal state of Goiás. This place is most likely the later "São José do Duro" = today's city of Dianópolis in Tocantins. The coordinates given above are from the western part of the Rio Preto valley and are tentative. – Only the specimens in BM and one of the two in W bear Hiern's handwritten annotation and the characteristic abbreviation of his name "W. P. H." (see the magnified insert in fig. 16).

Richly branched shrub up to 0.6 (–1) m tall, deciduous; branches remarkably thin, often slightly flexuose; scales of the buds medium densely to very densely covered with long, appressed to slightly spreading, flexuose, in vivo ferruginous hairs abaxially, glabrous adaxially; the outer scales ± semicircular, ca. 3 mm wide; the inner ones ± semielliptic, up to 6 mm long; young twigs medium densely covered with up to 2 mm long, patent, straight or slightly flexuose, light brown hairs and with much shorter, ± strongly flexuose hairs; twigs of the former seasons glabrescent, ± smooth, gray to brownish when dry, often with exfoliating epidermis; – **leaves** (fig. 16–17) alternate, covered in vivo with a ± ferruginous, in sicco with a brown to golden-brown indumentum; petioles 2 mm long, 0.5 mm thick, ± densely covered with 2 mm long, patent hairs; young leaves very densely covered with long hairs abaxially; leaf lamina ovate, elliptic or sometimes ± circular, (1.2–) 2.5–4.5 (–6.3) cm long, (0.8–) 1.5–2.5 (–3) cm wide, (1–) 1.3–2 (–2.5) times as long as wide, widest below or at the middle, chartaceous, on adaxial side glabrous (except the proximal veins) or sometimes (e.g., Cavalcanti et al. 3230) medium densely covered with ± flexuose, spreading to patent, long hairs, dark gray or grayish-black and slightly shiny when dry (the young ones black), on abaxial side medium densely covered with 0.5–2 mm long, straight to slightly flexuose, spreading to patent hairs, darker brown when dry; leaves most likely longitudinally v-like folded along the midvein when alive; leaf apex obtuse or broadly rounded, sometimes ± truncate, often with a dense tuft of hairs distally; base of the lamina ± deeply cordate or ± truncate; leaf margins entire, with long, patent hairs; flachnectaria apparently missing; midvein on adaxial side slightly sunken, flat or sometimes not visible distally, covered with ± patent hairs proximally, scattered hairy or sometimes glabrous distally, on abaxial side prominent and covered with ± patent long hairs; secondary veins ca. 6 per side, flat or slightly raised, ± scattered hairy or glabrous adaxially, flat and hairy abaxially; higher

Fig. 16: Lectotype of *Diospyros ovalis* HIERN [BM].

Fig. 17: *Diospyros ovalis*: a: twig with male flowers (from Hatschbach 39044 [US]); – b: male flowers (from Gardner 2813, isotype [W]); – c: three female flowers as seen from both sides (from Scariot et al. 693 [W]); – scale = 1 cm.

order veins ± hardly visible on mature leaves; – **inflorescences**: cymes placed in the axil of densely hairy, caducous bracts near the base of new long shoots; male cymes (fig. 17a–b) 1–3-flowered; stalks (peduncles and pedicels) 6–20 mm long and ca. 1 mm wide, densely hairy (indumentum like the one on young twigs); pedicels of the lateral flowers up to 5–11 mm long, ca. 1 mm thick, distally (at the base of the flowers) with a dense ring of patent hairs; female cymes apparently 1-flowered (only a photo of Scariot et al. 693 seen); stalks (peduncles and pedicels) short, densely hairy; bracteoles up 6 mm long, 2 mm wide in both sexes, widest at the base, obtuse, densely hairy abaxially, glabrous adaxially, soon caducous; – **flowers** (3–) 4 (–5)-merous, covered in vivo with a ± ferruginous, in sicco ± golden-brown indumentum; male flowers (fig. 16, 17a–b) 12 mm long at anthesis (when petals erect and with pedicels excluded), ca. 10 mm wide; calyx 6–8 mm long and ca. 7 mm wide, undivided in the proximal 1.5–2 mm, on the outside ± densely covered with slightly flexuose or straight, spreading or less frequently patent, long hairs intermixed with much shorter, more flexuose ones, on the inside with shorter and more scattered hairs, green when alive; calyx lobes 4–5 mm long, 2 mm wide, triangular, acute, flat, with a tuft of hairs at the apex; corolla green (Gardner 2813, Cavalcanti et al. 3230, Paula-Souza et al. 9085), greenish (Antar & Escaramai 296, Fonseca et al. 6637) or (after anthesis?) pale pink (Hatschbach 39044) when alive, 10–11 mm long at anthesis (when lobes erect), on the inside glabrous or rarely with scattered, short hairs distally (Cavalcanti et al. 3230), on the outside medium densely to densely covered with hairs of different length (the longer ones ± straight and slightly spreading, the much shorter ones more flexuose; lateral parts of lobes glabrous); tube (1–) 2–2.8 mm long; corolla lobes 7–10 mm long and 4 mm wide, obtuse or rounded, widest in the distal half and there flexed out- and downwards when alive; stamens 18, 25 or 29 per flower [18 in a 4-merous flower of Gardner 2813, the type; 25 in a 4-merous flower bud of Cavalcanti et al. 3230, and 29 in two 4-merous flowers of Hatschbach 39044], 4–6 mm long, glabrous, single, the tips exserted; filaments 2 mm long and ca. 0.2 mm wide, fused together

near their base and adnate to the corolla tube 0.5–1 mm above its base; filaments in the older bud of Cavalcanti et al. 3230 only 1 mm long, ± fused together over their whole length (probably still not fully expanded), glabrous abaxially, with few up to 2 mm long hairs near the base of the anthers adaxially, wine-red when alive; anthers linear, 3.8–4.3 mm long and ca. 0.3 mm wide; connectives obtuse or acute; rudiment of the ovary subglobose, ca. 1.5 mm in diameter, densely hairy, lacking stylodia; – **female flowers** [only two buds and one anthetic flower of Scariot et al. 693 were available: one bud with four calyx lobes and four petals; the other bud and the anthetic flower with three calyx lobes and four petals each; fig. 17c] ca. 13 mm long at anthesis (when lobes erect and with pedicels excluded); calyx 8 mm long and ca. 10 mm wide, undivided in the proximal ca. 1.5 mm, densely covered with long, ± straight, slightly spreading hairs on the outside and with slightly shorter ones on the inside; calyx lobes 6 mm long, 4 mm wide, broadly triangular, ± acute, ± flat; area around the sinuses between the calyx lobes inconspicuous; corolla 11 mm long at anthesis (when lobes erect), glabrous adaxially, green when alive, on the outside only covered with indumentum along the keel of the petals (with hairs of two sorts: long, ± straight and thick ones intermixed with much shorter, flexuose ones), elsewhere glabrous; tube 1 mm long; corolla lobes 10 mm long, ca. 5 mm wide, widest in the distal half, obtuse; staminodia probably 4 (only 2 seen, flower damaged by insects), episepalous, 2.8 mm long, ca. 0.2 mm wide, ± linear (slightly widened in the distal half), flat, obtuse, glabrous, adnate to the corolla tube 0.5 mm above its base; ovary of the only dissected flower 3-carpellate and 6-locular, 5.5 mm long (including stylodia), ca. 3.5 mm in diameter (including the 1 mm thick, very dense indumentum-layer), ± abruptly narrowed into the stylodia, very densely covered with golden-brown, distally spreading, straight, long hairs; stylodia 3, 1.5 mm long, fused together in the proximal half, densely hairy except distally; stigmata widened; – stalk of the **fruits** 7–15 mm long, 2–3 mm thick, densely hairy; fruits (only photos seen!) ± globose, green and densely covered with ± ferruginous hairs when unripe, yellow when mature and up to ca. 3–4 cm in diameter (Mendonça et al. 5267); calyx on fruits densely hairy; lobes triangular, up to 9 mm long, 4 mm wide, acute, flat; seeds not available, said to be black and covered with an opaque fruit pulp (Mendonça et al. 5267).

Notes: Very unfortunately, only Gardner 2813, Hatschbach 39044, Cavalcanti et al. 3230, and three female flowers of Scariot et al. 693 were available for study. From all the other collections I have just seen digital photos. Judging from the base of a plant shown on a photo of Paula-Souza et al. 9136, the species could be among those developing xylopodia (enlarged, woody subterranean rootstocks; see for this e.g., Rizzini & Heringer 1961, 1962). This needs however further investigation in the field.

Photos taken by Henrique Moreira in 2013 near São Domingos in Goiás, display twigs with pendulous, 4- or 5-merous, male flowers with greenish-yellow petals. The bark is smooth; the leaves are noticeably small in size, and the indumentum of the plant is dense and ferruginous (see www.bremflores.eco.br).

D. ovalis seems to hybridize with the closely related *D. lasiocalyx*. The specimens Munhoz et al. 7760 and 7761 (separately listed below) seem to belong to such hybrids and were collected near the Parque de Terra Ronca in Goiás, an area where both species occur. These plants were reported to be three meter tall. Their leaves are quite small and similar to those of *D. ovalis*, but the indumentum is different and the hairs are shorter. – Manoel Claudio da Silva Junior from Brasília sent me in 2015 photos which he took in

the same area. His plant is identical with Munhoz's specimens. The gray bark of a small tree (trunk probably 5–10 cm in diameter) is not corky but finely scaly, the sprouting leaves are partially reddish tinged and hairy, and the mature leaves are only little longer than wide. The male inflorescences are seemingly not well developed (as are those on Munhoz 7760), hanging, and the 4-merous flowers are greenish-yellow. The fruit shown on a photo is a little bit longer than wide, brownish-green with minute lighter dots, covered with a short light indumentum, and apparently already ripe. Its interior is beige and apparently soft, and the seeds are covered with a white layer of fruit pulp. – The collection Alvarenga et al. 824 displays 1.5–2 cm long fruit stalks, large leaves, and was reported to be from a 0.7 m tall subshrub. It is provisionally listed under *D. lasiocalyx* but it may also belong here.

Anatomy: The anatomy of the leaves was described by PARMENTIER (1892: plate 2, 12).

Distribution, habitat and phenology: It is known only from Brazil (southern Piauí, eastern Tocantins, northeastern Goiás, and western Bahia, fig. 7). It was collected in sandy places in a "cerrado baixo fechado", "cerrado sensu stricto", "cerrado aberto com *Melocactus* e *Syagrus acaule*", "cerrado ralo adjacente a uma vereda", and in a "campo sujo" not burned during recent years at elevations of 400–750 m. – It was found in flower from September to November and in fruit in February and from October to December.

Specimens examined: **Brasil**, Piauí, Ribeiro Gonçalves, Brejo das Meninas, [8°50' S, 45°24' W], cerrado, (fl male), 4 Sep. 1981, **A. Fernandes & V. Rodrigues s.n. (EAC 10747)** [EAC n.s. (dig. photo)], "subarbusto". – Tocantins, Ponte Alta do Tocantins, Jalapão, estrada para Mateiros, ca. 69 km de Ponte Alta, 10.4091° S, 47.0956° W [10°25' S, 47°6' W], cerrado, (fl male), 6 Oct. 2007, **J. Paula-Souza et al. 9085** [CTES n.s., SI n.s., SPF n.s. (dig. photo)], "arbusto ca. 1 m; flores verdes"; – ESEC Serra Geral do Tocantins, 412 m, 10º30'40" S, 47º11'48" W, cerrado baixo fechado; solo arenoso, (fl male), 29 Nov. 2012, **M.L. Fonseca et al. 6637** [IBGE n.s., RB n.s. (dig. photo)], "subarbusto ca. 0,6 m, ocasional; folhas cartáceas, discolores, verdes; flores esverdeadas"; – Mateiros, Parque Estadual do Jalapão, próximo à sede do parque, 521 m, 10º34'31" S, 46º30'22.9" W, campo sujo, há 10 anos livre de queimadas; solo arenoso, seco, (fl male), 30 Oct. 2013, **G.M. Antar & M. Escaramai 296** [CEN n.s. (dig. photo), RB n.s. (dig. photo), SPF n.s.], "arbusto 50 cm; flores esverdeadas"; – same area: cerca 8 km da cidade, 483 m, 10°34'44" S, 46°29'39" W, cerrado na borda de vereda; solo arenoso, (fr), 1 Dec. 2012, **M.L. Fonseca et al. 6703** [HUEFS n.s. (dig. photo), IBGE n.s., RB n.s. (dig. photo)], "subarbusto ca. 0,5 m; folhas cartáceas, discolores; frutos marrons"; – Mateiros, Jalapão, estrada para Ponte Alta do Tocantins, ca. 9 km de Mateiros, 10.5623° S, 46.4426° W [10°34' S, 46°27' W], cerrado, (fl male, female, yfr), 7 Oct. 2007, **J. Paula-Souza et al. 9136** [CTES n.s., SI n.s., SPF n.s. (dig. photo)], "arbusto ca. 50 cm; flores verdes; frutos imaturos verdes"; – Pindorama, estrada para Pindorama, 500 m, 11°2' S, 47°28' W, cerrado stricto senso, com solo arenoso e pedregoso, (yfr), 16 Nov. 1998, **R. Farias et al. 177** [HUEFS n.s. (dig. photo), UB n.s.], "pequeno arbusto 50 cm; fruto piloso ferruginoso"; – Município de Dianópolis, bacia do Tocantins, sub-bacia do Rio Palma, 619 m, 11°40'14.7" S, 46°40'37" W, cerrado ralo adjacente a uma vereda; solo arenoso, (yfr), 17 Oct. 2008, **R.C. Mendonça et al. 6263** [HUTO n.s. (dig. photo), IBGE n.s., RB n.s. (dig. photo)], "subarbusto heliófilo, 0,3 m; folha membranácea pilosa concolor verde; fruto e cálice ferrugíneos"; – Ponto 404(2), 746 m, 11°33'35" S, 46°28'48" W, cerrado; altiplano; solo arenoso (neosolo quarzênico), (fl female), 24 Sep. 2003, **A.O. Scariot et al. 693** [CEN n.s. (dig. photo), W (only three flowers, fig. 17c)], "subarbusto 50 cm; flor verde; catáfilos piloso e ferrugíneos; pétalas verdes"; – same area: 663 m, 11°37'0" S, 46°26'41" W, cerrado aberto com *Melocactus* e *Syagrus acaule*; substrato: areia quartzosa, (fl male), 28 Sep. 2003, **T.B. Cavalcanti et al. 3230** [CEN n.s. (dig. photo), W], "subarbusto 50–60 cm; tricomas alaranjados nas folhas; flor verde; sépalas verdes com tricomas ferrugíneos a dourados; filetes [filaments] vináceos; pétalas negras nas flores velhas". – Goiás, Município de Campos Belos, Povoado de Pouso Alto, 605 m, 12°59'51" S, 46°20'33" W, cerrado; solo arenoso, (fr), 31 Oct. 2000, **M.A. da Silva et al. 4620** [CEN n.s. (dig. photo), IBGE n.s.], "subarbusto heliófilo em moita [group of shoots] de 0,2–0,4 m; folhas discolores verde ferrugíneas; frutos pilosos verde amarronzados"; – São Domingos, -13.6°, -46.3° [13°36' S, 46°18' W], (fl male), **H. Moreira** [photos of living plants; email

24 April 2013; see also www.bremflores.eco.br]; – Mun. Posse, Nova Vista, [14°15' S, 46°23' W], campo cerrado de solo arenoso, (fl male), 8 Oct. 1976, **G. Hatschbach 39044** [MBM, US, W], "subarbusto 50 cm, flor rosado pálido"; – Município de Mambaí, próximo a Vila Barú, ca. 450 m, 14°27'40.8" S, 46°7'7.4" W, cerrado em solo arenoso, (fr), 19 Feb. 2003, **R.C. Mendonça et al. 5267** [IBGE n.s., RB n.s. (dig. photo)], "subarbusto heliófilo, comum, ca. 0,5 m; caule com casca lisa; folhas cartáceas; fruto imaturo cor verde acobreado e maduro amarelo; semente preta evolvida por arilo opaco".

Putative hybrids with *D. lasiocalyx*: Goiás, São Domingos, na estrada de acesso ao Parque de Terra Ronca, 13°36'44" S, 46°17'23" W, cerrado sentido restrito ralo, (fl), 28 Mar. 2015, **C.B.R. Munhoz et al. 7760** [UB], "árvore 3 m; flor amarela"; – same data: (fr), **7761** [UB], "árvore 3 m".

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