

A revision of neotropical *Diospyros* (Ebenaceae): part 15

B. Wallnöfer*

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 widespread, very variable, South American *Diospyros capreifolia* MART. ex HIERN (synonyms: *Maba melinonii* HIERN, and *D. ubaita* B.WALLN.) as well as the closely related Peruvian endemic *D. dolmen* B.WALLN. are here presented. Figures, a distribution map, vernacular names, information on habitat, and a list of specimens are included.

Key words: Ebenaceae, *Diospyros capreifolia*, *dolmen*, *ubaita*, *Maba melinonii*, 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 weit verbreitete, sehr variable Art *Diospyros capreifolia* MART. ex HIERN (Synonyme: *Maba melinonii* HIERN und *D. ubaita* B.WALLN.), sowie der damit nahe verwandte, peruanische Endemit *D. dolmen* B.WALLN. werden hier präsentiert. Abbildungen, eine Verbreitungskarte, Volksnamen, Angaben zum Habitat, und eine Liste der gesehenen Herbarbelege werden präsentiert.

Introduction

In the Americas, the Ebenaceae are represented by the genera *Diospyros* L. with about 100–150 species, and *Lissocarpa* BENTH. in BENTH. & HOOK.f. with eight species. In the course of the ongoing revision of the Ebenaceae for "Flora Neotropica", the following contributions have already been published: WALLNÖFER 1999, 2000, 2001a, 2001b, 2003, 2004a, 2004b, 2004c, 2005, 2007–2021, 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).

In the course of the ongoing revision, the species are published in single installments with a special focus on the species occurring in Southeastern Brazil. Amazonian species will be treated in subsequent publications. Due to the size and complexity of the genus *Diospyros*, any discussion on interspecific relationships, infrageneric arrangement and biogeography in the Neotropics would be premature before the completion of the revision.

Terminology. The terminology used in the descriptions is in accordance with STEARN (1992). The term "patent" means spreading at an angle of 90° (this definition is also given by BEENTJE et al. 2003, and BEENTJE & WILLIAMSON 2010). As in part 1–13 of

* Dr. Bruno Wallnöfer, Naturhistorisches Museum Wien, Botanische Abteilung, Burgring 7, 1010 Wien, Austria. – bruno.wallnoefer@nhm-wien.ac.at



Fig. 1: Lectotype of *Diospyros capreifolia* MART. ex HIERN [BR] (see also Fig. 3e).

the current revision, the term "spreading" is used for all intermediate positions of the hairs between appressed and patent. Where necessary, any further specifications are added, e. g. "slightly spreading". An indumentum is called "medium dense" when the surface (epidermis) of the organ in question is still visible between the crowded hairs; it is defined as "dense" when the surface is not visible.

Note: Additions are given in square brackets; coordinates given in square brackets were determined during this revision; acronyms of herbaria according to THIERS (2021); data from herbarium labels are cited here in a standardized way; – abbreviations: defl = deflobrate; 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.

***Diospyros capreifolia* ["capreaefolia"] MART. ex HIERN**, Trans. Cambridge Philos. Soc. 12 (1): 254–255 (1873); – [Figs 1–5].

Protologue. "Brazil, Cape Frio, Rio de Janeiro, Sello 1011!; Maranhão, Don!; Guinea, Surinam, Martius! 1678".

Typus. Suriname, Marowijne: "Albina Marawyna", [ca. 5°30' N, 54°3' W], (fl female), Oct. 1854, **H.R. Wulschlägel 1678** [lectotype (here selected): BR (Figs 1, 3e), isolecotypes: BR 3×, GOET, W 2×], "[Blüten] schön rein weiß [= flowers clean white]". – The label of one specimen in W bears the following information: "Etabl. [etablissement] Albina Merewyna [or Merawyna], 10/54; Blüten schneeweiß; schöne neue Art v. Martius in litteris [flowers snow-white; a beautiful new species, von Martius by letter]". Although unnumbered, seven further specimens which are kept in W and which were collected by Wulschlägel seem to belong to the type-collection. These specimens (including the two mentioned above) came to Vienna with the Reichenbach herbarium. Unfortunately, some chaos happened when that very large collection was mounted in Vienna. – HIERN (1873) erroneously ascribed the herbarium specimens with the number 1678 to Martius.

Syntypes. Brasilia, without data, (fl male), **F. Sellow 1011** [syntypes: B (destroyed, photo F 4367 in G, GH, MO, US), BM, F (fragment ex B)]. – Unfortunately, URBAN (1893, 1906) does not indicate where number 1011 was collected. The specimen in BM does not show any annotation by Hiern. If it was present, it could have gone lost when the specimen was remounted on new paper at a later point. – Two unnumbered specimens with male flowers in K could belong to the type-collection, and bear the following information: "Cabo Frio [22°53' S, 42°1' W], Prov. Rio do Janeiro, frutex 40' ". Both were annotated by W.P.H. Hiern at first as "*D. selloi* nov. spec." (is crossed out) and then as *D. capreifolia* (for more details concerning Hiern see the note further down). According to URBAN (1893), Sellow visited Cabo Frio in August 1815. – Don's specimen from Maranhão could not be located in the course of this revision.

= *Maba melinonii* ["mellinoni"] HIERN, Trans. Cambridge Philos. Soc. 12 (1): 143 (1873).

= *Ebenus melinonii* (HIERN) KUNTZE, Revis. Gen. Pl. 2: 408 (1891), nom. illeg.

= *Diospyros melinonii* (HIERN) A.C.SM., Bull. Torrey Bot. Club 60 (6): 390 (1933).

Protologue. "S. America, French Guiana, Maroni, Mellinon!"

Typus. Guyane Française, Maroni, croît sous le couvert de la forêt; terrain léger, (fl female, fr), Sep. 1876, **M. Mélinon 243** [neotype (here selected): P (Figs 2, 3f), isoneotypes: G, P 2×], "arbuste de 3 á 4 m; fleurs verdâtres; feuilles glauques en dessous"; "désignée sous le nom de bois gaulette; il était en fleur et en fruit en 7bre [= septembre]". – Due to their appearance, three specimens in BM, NY, and US with no number seem to belong also to this collection.

Note. The species is named after Eugène M. Mélinon (1818–1879), botanist and governor of the penal colony on the Maroni river (Saint-Laurent-du-Maroni penal colony) in French Guiana (see HOFF 2000). Most of the labels for his specimens were made in the Paris herbarium (P), and bear unfortunately very little information. Especially the collecting numbers and the date are often missing; the latter is, if present, usually incomplete. Therefore, it cannot be established now how many different gatherings of the same species he may have made. Many printed labels bear the number "18" which stands for the first two numbers of the year; the other two numbers should have been added by hand, but this happened only rarely.

Hiern often used to mark with the initials of his name ("W. P. H."; see fig. 16 in WALLNÖFER 2018) the specimens which he had studied. Very unfortunately, there are no such annotations on the specimens of Mélinon which I have seen in the course of this revision and which were collected on the Maroni as indicated in the protologue (HIERN 1873). Hiern's annotations may have been inadvertently erased or removed from the specimens at a later point. This could have happened when the specimens were mounted or remounted. In addition, many duplicates of Mélinon's collections were distributed afterwards from the Paris herbarium (P) to other institutions. It is thus unknown which specimens were studied by Hiern.

= *Diospyros ubaita* B.WALLN., Ann. Naturhist. Mus. Wien, B, 106: 249–252, fig. 2 (2005).

Typus. Brasil, Bahia, Município de Itacaré, estrada que liga a torre de Embratel com a estrada BR-101/Itacaré, a 5,8 km da estrada, ca. 25 km SE de Ubaitaba, ca. 200–300 m, [14°20' S, 39°6' W], (flbuds female), 21 Oct. 1979, **S.A. Mori & F. Benton 12859** [holotype: NY, isotypes: CEPEC n.s. (dig. photo), K, MG n.s. (dig. photo), MO, RB n.s. (dig. photo)], "árvore 20 m; frutos pilosos, perdidos no ato de coletar os galhos; em botão".

Note. The leaves are quite unusual and display a thicker texture because the collected twigs are most likely from the upper, exposed part of the tree crown.

Treelet or tree up to 26 m tall, dbh up to 35 cm, already flowering when ca. 2 m tall, evergreen; bole cylindric, without buttresses (Mori et al. 22885); outer bark usually dark brown or blackish, smooth or with small scales (see RIBEIRO et al. 1999); inner bark brownish-yellow to pink; sap-wood cream, white or yellowish; wood hard; twig apices and very young leaves densely hairy; young twigs terete, scattered to densely covered with ± straight or slightly flexuose, appressed, spreading or patent hairs of different length (the longest ones ca. 2 mm long); older twigs glabrescent; – **leaves:** alternate; petioles (2–) 3–6 (–8) mm long, 1–2 mm thick, flattened or ± canaliculate adaxially, covered with the ± same sort of hairs as that on the twigs, glabrescent when old; leaf lamina (1.3–) 4–12 (–15.3) cm long, (0.8–) 1.5–4 (–5.8) cm wide, 1.3–3 (–5) times as



Fig. 2: Neotype of *Maba melinonii* HIERN [P] (see also Fig. 3f).

long as wide, widest below the middle or less frequently \pm at the middle, \pm chartaceous, discolorous; adaxial leaf surface \pm finely reticulate-verrucose when dry, with scattered, patent hairs when young, soon glabrescent, dark green and shiny when alive, usually dark when dry; abaxial leaf surface with scattered, appressed or spreading (sometimes \pm patent), \pm straight or slightly curved hairs of different length, densely covered with gray, minute epidermal papillae (see the SEM images in ROLLET et al. 1990: figs 16–17, 20; compare also figs 10b, and 11 in WALLNÖFER 2021), light gray or grayish-green when alive; leaf apex acuminate, less frequently acute; base of the lamina cuneate, sometimes \pm truncate or even faintly cordate; leaf margins entire, with spreading hairs when young, soon glabrescent, revolute especially proximally when dry, often undulated when alive; flachnectaria minute (ca. 0.1 mm in diameter), few to many, scattered on abaxial leaf surface (also near leaf apices), some of them rarely also adaxially (e. g., Elburg 9381 in NY), often hardly visible; midvein on adaxial side sunken, \pm densely covered with \pm patent, long hairs, glabrescent on old leaves, on abaxial side markedly prominent, scattered to medium densely covered with \pm appressed, spreading or patent, straight or slightly bent hairs of different length (the longer ones up to 1 mm long); secondary veins 6–10 per side, slightly raised or sunken, sometimes hardly visible adaxially, tertiary veins not or only hardly visible adaxially, usually well visible abaxially; higher order veins usually not visible on both sides; – **inflorescences**: the male ones \pm contracted (at their base with additional, lateral cymes), up to 10–15 mm long, up to ca. 15-flowered, placed in the axil of mature leaves; bracts 1.5–4 mm long, 0.8–2 mm wide; bracteoles 1–2 (–3) mm long, ca. 0.8 mm wide, densely hairy abaxially, glabrous adaxially; stalks (peduncles and pedicels) 1.5–3 mm long, 0.8 mm wide, densely hairy; – female cymes 1 (–4)-flowered, placed in the axil of mature leaves; stalk 4–5 mm long, 1 mm thick, densely hairy; bracts 1–3 mm long, 2–3.5 mm wide; bracteoles 2–3 mm long, 0.8–1.5 mm wide, \pm acute, medium densely covered with \pm appressed hairs abaxially, glabrous or with some scattered hairs adaxially; – **flowers**: 5–6 (–7)-merous, scented; – **male flowers**: varying in size from 3–4 mm (e. g., Pérez et al. 6839, see Figs 3a, 5a) to ca. 8 mm (e. g., Folli 146, 6443, see Figs 3c–d) in length at anthesis (pedicels excluded, and with petals flexed outwards); largest flower buds up to 10 mm long and 6 mm wide; calyx 3.8–6 (–8) mm long, undivided in the proximal 1.5–3 (–4) mm, green, covered with a ferruginous indumentum when alive, on the outside medium densely covered with appressed or \pm spreading, \pm straight or \pm flexuose hairs of different length and thickness; calyx lobes 2–4 (–5) mm long, 0.8–2 (–4) mm wide, triangular, flat, on the adaxial side densely covered with \pm patent, curled hairs towards the margins and with appressed, \pm straight hairs along the median line of the lobes, valvate in bud; corolla 5–7 mm long (when lobes erect), ca. 10 mm wide at anthesis, white or cream (yellow?) at anthesis when alive; corolla tube 1 mm long; corolla lobes 3–6 mm long, 2–3 mm wide, widest at or above the middle, rounded, obtuse or \pm acute distally, glabrous adaxially, on the outside with clusters of straight or slightly bent, \pm appressed or spreading. long hairs proximally on the median line of the lobes, glabrous elsewhere; stamens 16–86 per flower (in 5-merous flowers: 16 in Pérez et al. 6839, 20 in Pipoly 16382, 28 in Ferreira et al. 10931, 36 in Lindeman 4950, 37 in Sellow s.n. [according to an annotation on the specimen in US], ca. 39 in Daly et al. D684, 44 in Rimachi 5366, and Reynel & Meneses 5067, 80 in Folli 146; in 6-merous flowers: ca. 60 in Krukoff 1188, and 86 in Folli 6443), differing much in size, 1.5–4.5 mm long, up to 0.2 mm wide, filiform, some paired, exserted, white, cream or yellow when alive; filaments 0.2–1 mm long, adnate to the



Fig. 3: *Diospyros capreifolia*: (a) male cymes (from Pérez et al. 6839 [W]); (b) male flower bud and corollas (from Krukoff 1188 [G]); (c–d) male flowers (from Folli 146 [W]); (e) female flowers (from Wulfschlägel 1678, lectotype [BR]); (f) female cymes (from Mélinon 243, neotype of *Maba melinonii* [P]); (g) female flower buds (from Folli 4109 [W]); (h) young fruits (from Maceda 216 [BRIT]); (i) fruits (from Paciencia et al. 2362 [W]); – scale = 1 cm.

corolla tube near its base and on the receptacle; anthers 1–3 (–4) mm long, up to 0.2 mm wide; connectives with long, straight, appressed hairs especially on the adaxial side (the distal ones surpassing the apex of the stamens by ca. 1 mm); apex of connectives acute, 0.2–0.6 mm long; rudiment of the ovary (pistillode) missing; – **female flowers** (Figs 3e–g): largest flower buds shortly before anthesis up to 11 mm long (pedicels excluded); flowers at anthesis up to 12– ca. 20 mm wide; calyx 6.5–10 mm long, undivided in the proximal 2.5–3.5 mm, green, covered with a ferruginous-brown indumentum when alive, on the outside medium densely covered with ± straight or flexuose, appressed or spreading hairs of different length (the longer ones ca. 1 mm long); calyx lobes 4–7 mm long, (1.5–) 2–3 mm wide, triangular, flat or with slightly involute margins, on the inside densely covered with patent, strongly curled hairs towards the margins and with appressed, slightly longer, ± straight hairs along the median line of the lobes, valvate in bud; sinuses between the calyx lobes inconspicuous; corolla up to 8 mm long (when lobes erect), adaxially glabrous, abaxially along the median line near the base of the lobes medium densely covered with ± spreading, ± straight or ± flexuose, up to 2.5 mm long hairs, glabrous or sometimes with scattered hairs elsewhere, white or cream at anthesis when alive; corolla tube 1 mm long; corolla lobes 5.5–7 mm long, (3–) 5–6 mm wide, broadly elliptic, widest ± at the middle, ± acute or ± rounded; staminodia 10–41 (10 and 12 in 6-merous flowers of Santos 461, 17 in a 6-merous flower of Prance et al. 7798; 25–30 according to HIERN 1873; 41 in a 5-merous flower of Ducke MG12132), usually much reduced, sometimes bilobed distally, attached to the corolla tube 0.5–0.8 mm above its base; free part of the staminodia 1–2 (–2.5) mm long, narrow, widest at the base, completely glabrous in some flowers or in others at least partially with some straight hairs (the distal ones surpassing the apex of the staminodia by 1 mm); ovary 4 mm long (including stylodia), 1.5–2 mm in diameter (the dense indumentum excluded), 8– or 10-locular, very densely covered with straight, spreading, ± ferruginous-brown, long and thick hairs; stylodia 4, (2–) 3–5.5 mm long, free nearly to their base, white when alive, densely covered with thin hairs proximally, ± scattered hairy in the distal half; stigmata ca. 2 mm long, bilobed and widened; – **fruits**: stalk 4 mm long, 4 mm wide distally, medium densely to densely covered with hairs; fruits solitary or rarely two per cyme, ± globose (Figs 3h–i), up to 3.6 cm in diameter, changing color from green to yellow and to orange (or brown?) when ripe and alive, detaching with the calyx, covered with a yellowish-brown to ferruginous-brown indumentum when alive and with raised tubercles; tubercles and the areas inbetween densely covered with short, ± patent, slightly curved hairs; tubercles with one 3–4 mm long, straight, patent, thick, brown bristle at the top, becoming ± flattened on some fruits at maturity; fruit wall 1–2 mm thick, with tightly adhering epidermis when dry; fruit pulp sweet, edible (according to Ducke RB 22309, and Teixeira et al. 770), clear (Bhikhi et al. 907); calyx on fruits up to 2.5 cm in diameter, undivided in the proximal 3 mm, hairy on both sides, green, yellowish or brown when alive; lobes (4–) 6–9 (–11.5) mm long, 4–5 (–6.5) mm wide, triangular, ± reflexed distally; margins of the lobes flat or sometimes ± revolute when dry; area around the sinuses between the calyx lobes inconspicuous; seeds dark brown to blackish, shaped like beans or coffee-beans or like the segments of an orange, 14–25 mm long, 8–11 mm wide, 5–8 mm thick.

Note. This species is widely distributed, exceptionally variable and is treated here in a very broad sense. The indumentum on twigs and leaves is very variable, and the hairs

can be appressed, spreading or patent. The morphological variability seems, however, not to correlate with any geographic distribution. Flowers in the western populations seem to be generally smaller and possess fewer stamens and staminodia than those in the eastern and southeastern part of the distribution range.

As can be seen on the specimens Gentry & Jaramillo 28054, Mori & Pipoly 15579, and Riera 1490, the growth architecture conforms to Massart's model (see for this: HALLÉ et al. 1978). Oldeman 2353 shows a young plant with a big taproot.

Several collections were available for study only via digital photos, thus the presence of papillae on the abaxial leaf surfaces could only be deduced in an indirect way. Leaf surfaces covered with a layer of papillae tend to have a gray (glaucous) appearance. In some cases however either the photos were of bad quality or the plants were not dried properly, thus some doubts remained. In such cases the specimens were assigned tentatively to this species and need direct reexamination.

Hybrids. Three atypical specimens from the Mata Atlântica in Bahia and Espirito Santo, namely Sant'Ana et al. 182 (sterile) and Santos 3835 (with very few male flower buds) may represent hybrids between *D. capreifolia* and *D. apeibacarpos*, and Peixoto et al. 3091 (sterile) a hybrid between *D. capreifolia* and *D. gaultheriifolia*. These specimens display areas with \pm badly developed papillae only on the abaxial side of younger leaves. Papillae are \pm absent from older leaves. This matter needs, however, further investigation.

Figures. twig and leaves (FOSTER et al. 2002a: plate 10, photo 193; FOSTER et al. 2002b: plate 8, photo 154); bark, leaves, a male flower, and a fruit (RIBEIRO et al. 1999); fruit (ROOSMALEN 1985: plate 42, fig. 6); SEM images of epidermal papillae (ROLLET et al. 1990: figs 16–17, 20).

Distribution and habitat. *D. capreifolia* is known from Brazil (Acre, Amapá, Amazonas, Bahia, Espirito Santo, Maranhão, Pará, Rio de Janeiro, and Rondônia), Bolivia (Pando), Colombia (Amazonas, Caquetá, Vaupés), Ecuador (Orellana, Pastaza), French Guiana, Guyana (Cuyuni-Mazaruni, Pomeroon-Supenaam), Peru (Amazonas, Loreto, Madre de Dios, Pasco, San Martín), Suriname (Brokopondo, Marowijne, Para, Sipaliwini), and from eastern Venezuela (Bolívar, Delta Amacuro); see Fig. 4.

It is a species of the forest understory but also of the canopy, and grows usually in primary, non-flooded ("terra firme") rainforests frequently on clayey or sandy soil, or on yellow or red latosol at low altitudes. The highest occurrence (700 m) was reported from a montane rainforest in San Martín in Peru (Rimachi 5366). It was also observed in the campinarana, a vegetation type which is adapted to extremely poor soil, and in secondary or disturbed forests and woods (capoeira, capoeirão). Rarely it was collected in inundated forests, e. g., in Pará in a "mata de várzea pouco mexida" (Lins et al. 199), as well as in an "igapó" (Dardano & Black 48-3156), in Acre in a "steeply sloped varzea/terra firme transition forest" (Campbell et al. 10974), and in Madre de Dios (Peru) in a "swamp tree plot" (Gentry & Jaramillo 57942). In Guyana, it is a member of the "Wallaba forest" and of the "dry Mora forest" (Forest Dep. Brit. Guiana 3695, 6367). – In the Mata Atlântica (Brazil), it is indicated by SANTOS & SANO (2009) for the "floresta ombrófila densa/aberta". In Bahia, it was collected in moist forests (floresta higrófila), and in the "restinga" (coastal forests). AMORIM et al. (2008) indicated it for the "submontane tropical moist forest". Collectors reported it in Espirito Santo from the coastal

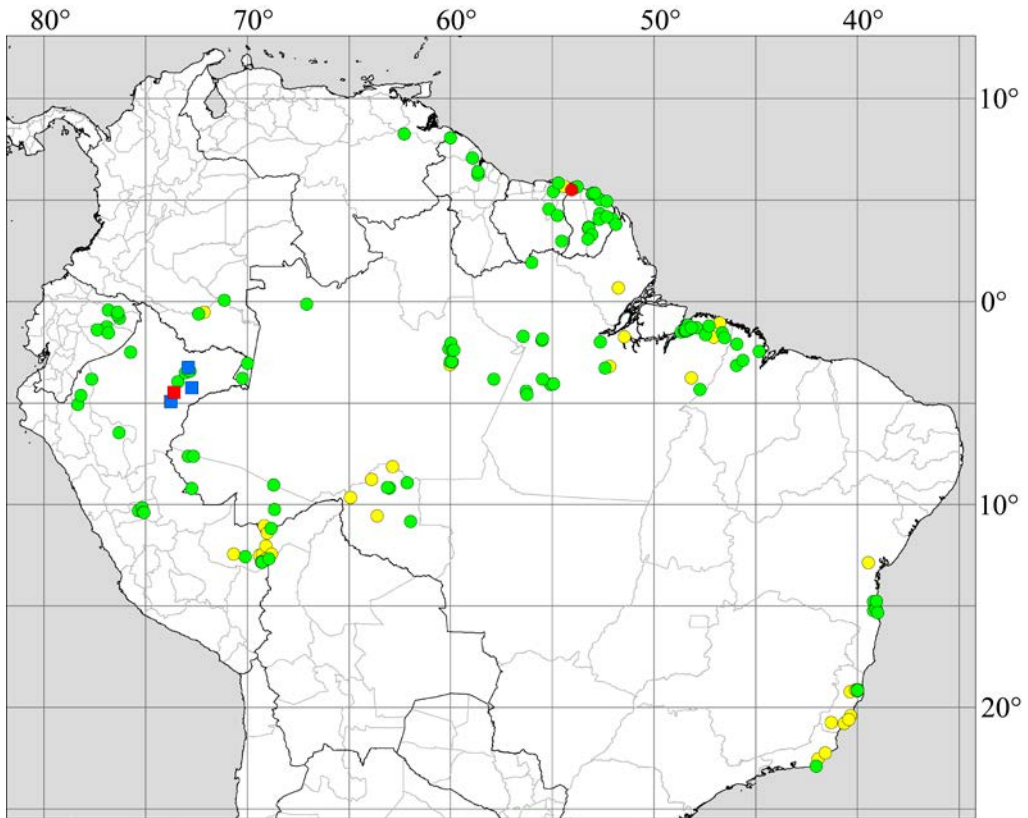


Fig. 4: *Diospyros capreifolia* (●; locality of the lectotype: ●; only digital photos of specimens seen: ●); – *D. dolmen* (■; type locality: ■).

restinga forests (compare also ASSIS et al. 2004, and LEITE 2010), the "mata de tabuleiro" (see ROLIM et al. 2016), the "mata pluvial", and the "capoeirão". Near Linhares it was observed in a forest on sandy, very poor soil (Pirani & Esteves 2612: "no interior da 'floresta de mussununga' [= muçununga]; solo muito arenoso, pouco folheda"). In the Rio de Janeiro state it occurs in a few coastal restinga remnants (e. g., Farney & Araújo 3437, 3448).

Phenology. The species was collected in flower and fruit all over the year. In the Mata Atlântica it was found in flower from October to December.

Biology and ecology. The anatomy of the wood was studied by DÉTIENNE et al. (1982), and the leaf morphology by ROTH (1984), and ROLLET et al. (1990). The flowers are pollinated by moths (MONTROYA-PFEIFFER et al. 2018). According to ROTH (1987), the fruits are probably dispersed by frugivorous birds. The fruits are also eaten by the golden-headed lion-tamarins (*Leontopithecus chrysomelas*) (CASSANO 2011), the woolly monkeys (*Lagothrix lagotricha lagotricha*) (RIMACHI-TARICUARIMA et al. 2019), and tamarins which belong to the genus *Saguinus* (J.T. Anderson 469).

Vernacular names. In the federal state of Amazonas (**Perú**) it is called "tseasnum" (Ancuash 373, 489, VÁSQUEZ MARTÍNEZ et al. 2003, VÁSQUEZ MARTÍNEZ 2010), in Pando (**Bolivia**) "piraquina blanca" (Meneces 606, TORRICO PARDO 1993, WALLNÖFER & CHÁVEZ 2014), and "piraquina fierro" (Terceros & Meneces 1412, WALLNÖFER & CHÁVEZ 2014), in the federal state of Bolívar (**Venezuela**) "moradito" (Blanco 459, ROTH 1984, 1987), or "chaparrillo" (Blanco 77); [both both are mentioned also in SOTHERS & BERRY 1998]. In the Creole language in Para (**Suriname**) it is named "witte bast blaka-oema" or "blakaoema (witte-bast)" (Elburg L.B.B. 9381, Schulz 8558), and "blakka oema" or "kleinbladige blakaoema" (Schulz 7436, OUTER 2001). According to KLOOSTER et al. (2003), in Surinamese Dutch and in the Sranan language it is called "witbast", or "witbast blaka-uma". Bhikhi et al. 907 report the name "awariston" (Sranan language) which however is mostly used for *D. ropourea*. The vernacular names used in **Guyane Française** are "bois gaulette" (Mélinon 243), "bois-charbon" in the Créole language (Oldeman 2353, DÉTIENNE et al. 1982, WALLNÖFER & MORI 2002), and "seimínio priyo" in the language of the Palikur (Grenand 3013).

In the Brazilian federal states, it is called as follows: in **Amapá**: "caki preto" (Rosa 1309); in **Bahia**: "pindaiba amarela" (Santos 461), and "pivide de abóbora branco" (Santos 473, SILVA et al. 2008); in **Espirito Santo**: "caquí da mata" (on several collections of D.A. Folli, Siqueira 1307, Gomes et al. 3472, Paciencia et al. 2362, LEITE 2010); in **Maranhão**: "altinha" (Paiva 1); in **Pará**: "jaquaré" (Bamps 5223, SANTOS et al. 2019), "caqui preto" (Cordeiro 2021, Lins et al. 199), "caqui-da-mata / mutamba" (FEITOSA 2015), "caqui folha branca" (PIRES & SALOMÃO 2000), "taquarí-rana" or "taquary-rana" (Pessoal do Museu MG 9765); in **Rondônia**: "pau borda do brada" (Pereira & Souza 0209-029-1997), and "ovo de mucura" (Silva 32).

According to (BALÉE 1986, 1994), the vernacular name "tamarimira" is seemingly used by the Ka'apor people in Maranhão (Brazil) for different species. It is given on the label of the specimen Balée & Ribeiro 38 (inventory voucher no. 550) which belongs to *D. capreifolia*, as well as on those of Balée & Ribeiro 429, 487 and Balée 2302 which display genuine *D. carbonaria*. In the first publication (BALÉE 1986), he indicated this name only for the inventory voucher no. 550 which represents *D. capreifolia*, but in the latter (BALÉE 1994), he used it solely for *D. duckei* [= *D. carbonaria*] and for a species which he called "*D. artanthifolia*" and whose herbarium specimens I did not see to date. In the latter publication, he indicated for *D. melinonii* (= *D. capreifolia*) also the vernacular name "yanu-kiha-wi-í" ("spider-hammock-thin-stem").

Use. In Pando (Bolivia), it is used to construct roofs and rustic houses (Meneces 606, Terceros & Meneces 1412). In Maranhão (Brazil) it is used by the Ka'apor people to make fences, and it is regarded as good firewood (BALÉE 1994).

Specimens examined: **Venezuela**, **Bolivar**, campamentos "El Paraíso" y "La Yagua", a 48 [?] km NE del caserío Los Rosos, este último a 17 km de Upata (sobre la carretera nueva Upata/San Félix), [ca. 8°15' N, 62°18' W], (fl male), Mar.–Apr. 1966, **C. Blanco 459** [FHO, MER 3× n.s. (dig. photos), MO, MY n.s., NY 2×, US, VEN n.s.], "árbol 13 m, 20 cm de diam.; flores unisexuales blancas"; – same area: (fr), 29 Apr.–4 Jun. 1965, **C. Blanco 77** [MER 3× n.s. (dig. photos), MY n.s., NY 2×, US, VEN n.s.], "cáliz persistente; fruto maduro color amarillo".

Delta Amacuro, Rio Amacuro, Venezuela-Guyana frontier, Sierra Imataca, upstream from San Victor, past Rio Matanaíma, up to Salto de Quebradero, 65–80 m, [ca. 8°4' N, 60°1' W], (fr), 2 Nov. 1960, **J.A. Steyermark 87234-A** [GH n.s., K, NY, RB n.s. (dig. photo), UB, VEN n.s.].

Guyana, Pomeroun-Supenaam, Pomeroun River, Patwau [= Patuau] Creek, [7°4' N, 58°56' W], understory tree of dry mora forest, (fr), 11 Feb. 1951, **Forest Dep. Brit. Guiana 6367 (= D.B. Fanshawe F3037)** [K, NY, U 2×], "tree 60' high and 10" diam.; leaves thick, chartaceous, brittle, glaucous below; fruit solitary, axill., scarcely stalked, few; calyx enlarged, greenish-black; fruit globose, deep yellow, hairy, 4 cm diameter; seeds 4–8, oblong, segment shaped, dark brown, with slimy coating".

Cuyuni-Mazaruni, Mazaruni Station [now called "Penal Settlement"], [6°24' N, 58°40' W], from mixed forest, (yfr), 30 Jan. 1945, **Forest Dep. Brit. Guiana 5040 (= D.B. Fanshawe F2304)** [K 3×, NY 2×, P 2×, S, U], "tree 30 ft., 3 in. diam.; leaves chartaceous, pruinose below; young fruit solit., axill., subglobose, covered with brown hairs, and surrounded by the green accrescent calyx"; – Lower Essequibo River, Barabara Creek, [ca. 6°15' N, 58°40' W], wallaba forest, (fl male), 7 Dec. 1942, **Forest Dep. Brit. Guiana 3695 (= D.B. Fanshawe F959)** [K 2×, NY, OXF/FHO (wood)], "50' tree 3" diam.; unbuttressed; leaves firmly chartaceous, glaucous below; buds and calyx green hairy; hairs brown; corolla waxen white, erect at first, laterally revolute; stamens white covered with long white hairs".

Suriname, Marowijne, Distr. Commewijne, Perica R., [5°51' N, 54°43' W], (fl female), 14 Oct. 1953, **J.C. Lindeman 4961** [K, MO, NY, U 3×, W], "tree 18 m, 15 cm diam.; flowers white, carp. orange-yellow, tomentose; corolla flat, lobes recurved"; – Rikanau prope Moengo, high forest on upper slope and plateau of bauxite hill near line 2, [5°41' N, 54°25' W], (st), 2 Jun. 1954, **J.C. Lindeman 6081** [BBS n.s. (dig. photo), U n.s.], "tree 10 m, 6 cm diam.; leaves grey beneath".

Para, Jodensavanne-Mapane kreek area (Suriname R.), N of Mapane Cr. in base III, block 836, [ca. 5°25' N, 54°58' W], rain forest, (st), 22 Sep. 1953, **J.C. Lindeman 4676** [BBS n.s. (dig. photo)], "tree 12 m, 5 cm diam.; leaves green grey beneath"; – same area: (fl male), 7 Oct. 1953, **J.C. Lindeman 4885** [B, K 2×, MO, NY, U, UB], "tree 17 m, 8.5 cm diam.; leaves grey green beneath; flowers white"; – (fr), 12 Oct. 1953, **J.C. Lindeman 4940** [BBS n.s. (dig. photo), NY, U], "tree 18 m, 12 cm diam.; leaves bluish grey green beneath (5GY6/2), dark green and shiny above (5GY3/4); fruit dark brown, hairy"; – (fl male), 13 Oct. 1953, **J.C. Lindeman 4950** [BBS n.s. (dig. photo), NY, U 2×, W], "tree 17 m, 15 cm diam.; leaves green grey beneath; male flowers white"; – (st), 8 Dec. 1954, **J.C. Lindeman 6711** [U, W], "small tree; leaves gray green beneath"; – same area: op roodzandige klei in hoogbos (on red sandy loam in mesophytic forest), (fl male), 1962, **J. Elburg (L.B.B.) 9381** [COL n.s. (dig. photo), BBS n.s. (dig. photo), F, K, MO, U], "boom, 10 m hoog, diam. 10 cm; kelk groen, kron wit"; – same area: hoogdrooge bos [dry forest]; sandige leem [sandy loam], (fl male), 22 Oct. 1955, **J.P. Schulz 7436** [BBS n.s. (dig. photo), NY, U, W], "18 m, 18 cm diam.; zonder geel onder bast (without yellow under cortex)"; – same area: (yfr), 8 Dec. 1955, **J.P. Schulz 7471** [K, MO, NY, U], "15 m, 10 cm diam."; – same area: nabij kamp 8, [ca. 5°25' N, 54°58' W], hoog droogland bos, (fr), 19 Jan. 1961, **J.P. Schulz 8558** [BBS n.s. (dig. photo), NY, U], "kleine boom uit ondergroei, 7 m hoog, 6 cm dbh; hout na korte tijd geel verkleurend, wit wanneer vers aangekapt; vrij algemeen in dit geb.; vruchten bronsgroen/geelbruin behaard".

Brokopondo, van Blommesteijn Lake, Suriname river, south-west lake, 43 m, 4°33.76' N, 55°11.29' W, primary forest on laterite soil; on forest edge, (fr), 13 Apr. 2011, **C.R. Bhikhi et al. 907** [L n.s., W], "tree 3 m; leaves white below, green above; fruits orange, covered with brown prickly hairs; calyx brown; seeds 6 to 7, black, surrounded by clear shiny pulp" (see Figs 5b–c); – Brownsberg, [ca. 4°57' N, 55°10' W], (fr), 2003, **C.R. Bhikhi** [BBS n.v. + photos of the living fruits].

Sipaliwini, Lely Mts., SW plateaus covered by ferrobauxite, S of camp 4 on plateau, 550–710 m, [4°15' N, 54°45' W], forest along road, (flbuds), 24 Sep. 1975, **J.C. Lindeman et al. 321** [BBS n.s. (dig. photo), K, NY, U, Z], "fallen medium-sized tree, leaves blue green beneath (7½GY6/2), bracts olive pubescent (5Y7/6), petals white"; – vicinity of Ulemari [= Oelemari] River, 99 km upstream from its confluence with Liani River, 150–200 m, 2°58'18" N, 54°33'14" W, low swampy forest and primary forest on hill, (fr), 13 Apr. 1998, **B. Hammel et al. 21489** [BBS n.s. (dig. photo), MO, U n.s. (dig. photo), US n.s. (dig. photo)], "tree 10 m; fruit green with reddish brown hairs"; – Sipaliwini savanna area on Brazilian frontier, 310 m, [ca. 1°55' N, 56°1' W], undisturbed high forest on hill slope, (st), 23 Jan. 1970, **F.H.F. Oldenburger et al. 1139** [BBS n.s. (dig. photo), U], "tree, diam. 8 cm"; – without locality, (fr), s.d., **J.P. Schulz 7197** [U (fruits only)].

Guyane Française, Mana, [ca. 5°40' N, 53°47' W], (fl, yfr), 1863, **M. Mélinon s.n.** [A, P]; – same area: (fl male), 1854, **M. Mélinon 126** [L n.s. (dig. photo), P 2×, Z]; – plateau no. 2, carreau no. 14, route de Mana, [5°37' N, 53°53' W], terrain sablonneux, (fr), 3 Apr. 1956, **French Guyana Forest Service 7435** [CAY, NY, P, U], "fruits verts, presque sessiles sur les rameaux, ronds 3 cm de diam. en moyenne couverts de poils

jaunâtres"; – Piste de St Elie, interfluve Sinnamary-Counamama, Pk 15.7, à la hauteur du camp ORSTOM, 5°20' N, 53°0' W, forêt primaire dense non perturbée; forêt mature, voute fermée, (st), 14 Aug. 1994, **J.-F. Molino 1101** [CAY, MPU n.s.], "arbre 3 cm dbh, stérile; tronc clair, bois blanc; rhytidome noir à l'intérieur; poils blancs appliqués sur les bourgeons, à l'envers des jeunes feuilles; jeunes rameaux vert-jaunâtres, avec poils appliques, grêles, cicatrices de pétioles saillantes; pétiole vert- grisâtre, poilu; limbe ondule, discolore, vert sombre luisant et glabre dessus, glaucescent et poilu sur les nervures dessous, atteignant 12 × 3,7 cm; nervation imprimée dessus, saillante dessous"; – same area: forêt primaire; arbre de strate inférieure, (fr), 16 Apr. 1986, **D. Sabatier 1214** [CAY 2×, W], "arbre 20 cm diam.; feuilles pales vert grisâtre face inférieure; limbe souple a marge ondulée; face supérieure nervures I et II déprimées, les III légèrement déprimées a quasi planes; fruits oranges, poilus"; – same area: (fr), 13 Jun. 1991, **D. Sabatier & M.F. Prévost 3622** [CAY, NY, W], "arbre 15.3 cm diam.; limbe souple à marge ondulée, face inférieure vert glauque, atteint 11 × 5,5 cm; nervure I déprimée face supérieure et saillante face inférieure; nervures II déprimées face supérieure et proéminentes face inférieure; fruits globuleux, verts, pileux quand jeunes"; – Piste de St. Elie, Crique Toussaint, [5°20' N, 53°0' W], forêt primaire; layon de crête, (fr), 17 Feb. 1988, **D. De Franceschi DDF 85** [CAY n.s., FHO, P], "arbre 18 m; modèle de Massart; tronc lisse, noirâtre, cylindrique à racines traçantes; écorce saumon, aubier claire; feuilles à marge ondulée; nervation pennée camptodrome; limbe gaufré, à face inférieure glauque, portant une à deux glandes par champ intersecondaire; fruit obovoïde apiculé (diam. 2–3 cm) verdâtre à poils roides dirigés vers l'apex"; – same area: (st), 12 Feb. 1988, **B. Riéra 1490** [CAY, W], "arbre modèle de Massart; feuilles: limbe ondulé; nervures en creux face supérieure imprimées; nervures I II III saillantes a sensibles, face inférieure velue, glanduleuse, longs poils roux peu nombreux et tomentum blanchâtre, bord du limbe poilu; jeunes axes poilus, verts, limbe souple; fruit sur les jeunes rameaux en position axillaire idem Kiwi; calice 5 S soudés, persistant; fruit brun roux avec nombreux poils"; – Station de la Piste de St. Elie (ECEREX), PK 15,5, 5°18' N, 53°3' W, forêt primaire, (st), 13 Mar. 1998, **M.F. Prévost & D. Sabatier 3472** [CAY n.s., W], "arbre 12 m, stérile; herbier d'un rejet prélève sur le tronc a 4 m; modèle de Massart; feuilles de l'axe orthotrope réduites; très court pétiole et limbe jusqu'à 3–3,5 × 1,5 cm; feuilles des axes plagiotropes pétiolées; limbe discolore acumine, marge ondulée, atteint 9–10 × 3–4 cm; face inférieure vert grisâtre; nervures I et II déprimées face supérieure, surtout la primaire; nervures II en arceaux réunis avant la marge"; – same locality: (st), 14 Mar. 1998, **M.F. Prévost & D. Sabatier 3476** [CAY n.s., W 2×], "arbre 12 cm dbh, stérile; tronc noir avec petites lenticelles; feuilles des axes plagiotropes a court pétiole; limbe discolore acumine vert glauque face inférieure, atteint 10 × 4 cm; face supérieure vert fonce luisante; marge du limbe ondulée; nervures déprimées face supérieure et saillantes face inférieure"; – Commune de Sinnamary, station de recherche de Silvolab à Paracou, [5°20' N, 52°55' W], forêt primaire après exploitation de bois, (st), 2 May 1996, **J.-F. Molino 1632** [CAY, MPU n.s.], "arbre 3 cm dbh, stérile; poils blancs appliqués sur les apex et sous feuilles; rameaux grêles, vert-jaunâtre; rhytidome noir à l'intérieur, bois dur (sur le tronc); limbe gaufré, discolore (glauque dessous); nervures I & II imprimées dessus"; – Gourdonville [= Goudronville], [5°1' N, 52°39' W], (fl male), 1 Sep. 1914, **R. Benoist 1587** [P], "arbre, fleur blanche"; – Cayenne, Jardin Botanique du Centre ORSTOM, 4°56'53" N, 52°19'4" W, Jardin, (st), 3 Oct. 2000, **D. Sabatier 4657** [CAY n.s., W], "arbre; jeune plant issu d'un semis; modèle de Massart; sur axes latéraux, feuilles alternes à court pétiole; limbe très discolore, brillant dessus, quasi mat et vert glauque dessous; marge ondulée, atteint 15 × 5 cm; nervures II en arceaux lâches réunis loin de la marge"; – Rivière Comté, sur la crique Galibi au (village) Tafia [not located], ca. 4°20' N, 52°40' W], (fl male), 20 Jul. 1967, **R.A.A. Oldeman B-1093** [CAY 2×, FHO n.s., K, NY, P, U, US n.s. (dig. photo)], "arbre d'environ 10 m de haut, 23 cm de diamètre; écorce d'un noir rougeâtre; bois blanc"; – Nouragues Nature Reserve, Grande Plateau, ca. 100 km SSW of Cayenne and 40 km SW of Regina, ca. 100 m, 4°5' N, 52°41' W, (st), 17 Nov. 2006, **S.A. Mori et al. 26504** [CAY n.s., NY n.s. (dig. photo), W], "tree 10.7 cm DBH"; – Fleuve Approuague, Rivière Arataye, Saut Pararé, 70 km SW Regina, [4°3' N, 52°42' W], (st), 26 Sep. 1983, **J.F. Villiers & C. Feuillet 1824** [CAY], "6 m, 7 cm diam.; rhytidome noir; tranche noire, puis beige; bois dur"; – Approuague, flats près de Saut Pissédising (bancale inférieure de Saut Athanase), [4°11' N, 52°19' W], forêt, (st), 26 Jan. 1967, **R.A.A. Oldeman 2353** [CAY, P], "jeune plante malformée; surface inférieure des feuilles très blanc"; – St. Georges – Régina, PK 32,150, [M.F. Prévost, 2002: ca. 4°4' N, 52°3' W], forêt primaire, (st), 29 Oct. 1998, **P. Grenand 3013** [CAY n.s., W 2×], "arbre moyen; pétiole canaliculé; limbe moyen (L. 5–7 cm, L. 3–4 cm), vert-brillant dessus, vert tirant sur le blanc dessous; nervures saillantes dessous, inscrites dessus"; – Chemin Maripa, en bordure du fleuve Oyapock, [3°48' N, 51°53' W], forêt, (fr), 2 Jun. 1970, **R.A.A. Oldeman T-818** [CAY, NY, P, U], "arbre, env. 6 m de haut; écorce blanchâtre, bois assez dur; fruit immature vert"; – Bas Oyapock, à 200 m sur le layon Maripa, [3°48' N, 51°53' W], (fr), 12 Jun. 1970, **R.A.A. Oldeman B-3383** [CAY, P], "arbre 5 m; écorce blanc sale recouverte de mousse; fruits avec poils gris"; – village

abandonné d'Eau Claire, à environ 7 km au Nord de Saül, [3°40' N, 53°13' W], zone basse sur roches vertes, (fr), 12 Feb. 1966, **R.A.A. Oldeman 2026** [B, CAY 2×, FHO n.s., K, P, U, US n.s. (dig. photo)], "arbre de 8 m de haut, d'environ 10 cm de diam. à la base, à contreforts d'une hypoténuse de 13 cm; écorce noire tachée de blanc, écailleuse; bois rougeâtre; fruit vert poilu"; – vicinity of Eaux Claires just S of Eaux Claires on the Route de Bélizon, ca. 250 m, 3°37' N, 53°12' W [correct is ca. 3°39' N, 53°13' W], non-flooded moist forest, (fr), 9 Feb. 1993, **S.A. Mori et al. 22885** [CAY, FHO, NY n.s.], "tree 20 m × 15 cm; the bole cylindrical, without buttresses; slash thin (ca. 2–3 mm thick), pink; fruits green, with brown hairs"; – Saül, La Fumée, 200–400 m, 3°37' N, 53°12' W [correct is 3°38' N, 53°12' W], tropical moist forest, (fr), 11 Apr. 1983, **S.A. Mori & J. Pipoly 15579** [CAY, FHO, L n.s. (dig. photo), NY n.s., P n.s. (dig. photo), US n.s. (dig. photo), W], "tree 25 × 30 cm; calyx green; fruit brown, fuzzy"; – Saül, Crique Limonade, secteur sud du PER de la société REXMA, autour du camp de terrain n° 2, au sud du bourg de Saül, 180 m, 3°34'43" N, 53°14'11" W, forêt hygrophile de basse altitude sur flat; forêt primaire s'étendant dans les flats de la Crique Limonade; comprend des secteurs plus ou moins inondables et des bas de pentes de collines, (fr), 19 Jun. 2008, **O. Tostain et al. 2033** [BM n.s., CAY n.s., MO n.s., NY n.s., P n.s. (dig. photo)], "arbre 10 m, diam. 10 cm"; – Massif des Emerillons, 250 m, 3°17' N, 53°4' W, forêt primaire, (yfr), 16 Oct. 2007, **J.-F. Molino & D. Sabatier 2454** [CAY n.s., W], "arbre 22,3 cm DBH; tronc à méplats; rhytidome écaillé noirâtre, avec lenticelles blanches; écorce interne peu épaisse, brune; limbe glaucescent face inférieure; fruit immature, enveloppé dans le calice"; – Rivière Petite Ouauqui, rive droite, au niveau de l'ancien village Hubert, [3°5' N, 53°15' W], forêt sur pente douce; socle granitique, (st), 20 Jul. 1973, **J.-J. de Granville 1876** [CAY 2×, FHO, NY, P, U], "petit arbre du sous-bois, de 1 à 2 m de haut; feuilles blanchâtres en dessous"; – bords de la Mana, vers terre rouge, (fl), Jul. 1854, **M. Mélinon s.n.** [P 2×]; – Maroni, (fl female), 1862, **M. Mélinon 385** [GH, P]; – same area: (fl male, fl female, yfr), s.d., **M. Mélinon s.n.** [A 2×, BM, E, F 3× n.s. (dig. photos), NY 2×, P 2×, US 2×]; – same area: (yfr), s.d., **Andonit s.n.** (Herb. J. de Saldanha 3378) [R]; – without further data, (fr), s.d., **M. Mélinon 418** [P]; – (fl female), s.d., **M. Mélinon 567** [P]; – (yfr), 1869, **M. Mélinon s.n.** [P].

Colombia, Vaupés, Río Apaporis, Soratama [between río Pacoa and río Cananarí], [ca. 0°4' N, 71°8' W], (fr), 7 Apr. 1952, **R.E. Schultes & I. Cabrera 16172** [B, BM, GH, P, U], "medium-sized tree; fruit brownish green".

Caquetá, Araracuara, 0°37' S, 72°24' W, en bosque alto, sobre suelo arcilloso rojizo de tierra firme, (st), 8 Nov. 1991, **J. Duivenvoorden et al. 859A** [AMD, BM, COAH n.s. (dig. photo)], "arbolito"; – same data: (st), 15 Nov. 1991, **J. Duivenvoorden et al. 983** [AMD, BM], "arbolito 4 m, sin exudado".

Amazonas, región de Araracuara, quebrada Agua Azul, 300 m, 0°32' S, 72°8' W, bosque primario; terrazas altas disectadas; bosque húmedo tropical, (st), Sep. 1992, **A. Posada et al. 1689** [COAH n.s., HUA n.s. (dig. photo)], "árbol 16 m"; – Mun. Tarapacá, Corregimiento de Tarapacá, Parque Nacional Natural Amacayacu, Sector Lorena (R. Cotuhé), 100 m, 3°2' S, 70°0' W, bosque de tierra-firme, (st), 23 Jul. 1992, **A. Rudas et al. 5752** [MO], "arbolito 9 m × 7,4 cm"; – Mun. de Leticia, Parque Nacional Natural Amacayacu, Quebrada de Agua Pudre, ca. 1,5 km NE de desemboca dura sobre el Río Amacayacu, 200–220 m, 3°47' S, 70°15' W, bosque muy húmedo, (fl male), 18 Nov. 1991, **J.J. Pipoly 16382** [MO, U, US n.s. (dig. photo)], "árbol 12 m × 12,2 cm".

Ecuador, Orellana, Estación Experimental INIAP – San Carlos, 5 km al SE de Los Sachas, 250 m, 0°25' S, 76°50' W, bosque húmedo tropical; suelo fértil aluvial, de cenizas volcánicas, (fr), 20 Feb. 1986, **W. Palacios et al. 1020** [F, FHO, K 2×, MO (only carp. seen), QCA n.s. (dig. photo), QCNE n.s. (dig. photo)], "árbol 6 m; cáliz verde; corola blanca cremosa; frutos amarillos, rugosos"; – Añangu, NW corner of the Parque Nacional Yasuní, ca. 300 m, 0°32' S, 76°22–23' W, undisturbed rain forest in the area of the tierra firma SEF-line, (fr), 15 Oct. 1983, **J. Korning & K. Thomsen 47137** [AAU, QCA n.s. (dig. photo), QCNE n.s. (dig. photo)], "small tree 4 m"; – Estación Científica Yasuní, Río Tiputini, al noroeste de la confluencia con el R. Tivacuno, 6 km este de la carretera Maxus, km 44, desvío hacia el pozo Tivacuno, 200–300 m, 0°38' S, 76°30' W [correct seems to be 0°40' S, 76°24' W], tierra firme; lomas de 30–50 m, de arcilla rojiza, (defl male), 26 Apr. 1996, **K. Romoleroux et al. 2281** [F n.s. (dig. photo), QCA n.s., W], "árbol ramifloro; corola anaranjada [when old]"; – same area: Sendero Oeste, 200–300 m, 0°59' S, 77°45' W [correct seems to be ca. 0°40' S, 76°24' W], (flbuds), 18 Aug. 1997, **K. Romoleroux et al. 3003** [F n.s. (photocopy), QCA n.s.], "árbol 15 m; botones café dorados"; – same area: (fl), 5 Dec. 1997, **K. Romoleroux et al. 3029** [F n.s. (dig. photo), QCA n.s.], "árbol 6–8 m; flores blancas"; – same area: este de la carretera Repsol-YPF, km 7 desvío hacia el pozo Tivacuno, Sendero Tinamou [on other label as "Tinamú"], 200–300 m, 0°38' S, 76°30' W



Fig. 5: *Diospyros capreifolia*: (a) male flowers from Pastaza in Ecuador (from Pérez et al. 6839); (b–c) fruits from Blommesteijn Lake in Brokopondo, Suriname (from Bhikhi et al. 907); – photo a: courtesy of Álvaro Javier Pérez Castañeda (QCA), and b–c: courtesy of F. Diran and Chequita Ratnakoemarie Bhikhi (both Suriname).

[correct seems to be 0°40' S, 76°24' W], tierra firme; lomas de 30–50 m, de arcilla rojiza, (fr), 22 Aug. 2000, **G. Villa et al. 438** [F n.s. (dig. photo), QCA n.s. (dig. photo)], "arbolito 6 m; frutos verdes"; – same area: (fr), 20 Jul. 2002, **G. Villa et al. 1822** [QCA n.s. (dig. photo), US n.s. (dig. photo)], "árbol 10 m, dap 70 mm; frutos inmaduros verdes"; – Aguarico Cantón, Reserva Étnica Huaorani, carretera y oleoducto de Maxus en construcción km 79–82, 250 m, 0°50' S, 76°18' W, bosque húmedo tropical, primario; suelos rojos, (fl male), 1–7 Mar. 1994, **A. Dik & R. Enomenga 1101** [K, MO, NY, QCNE n.s. (dig. photo)], "árbol 7 m, 9 cm DAP; corteza se oxida; flores con 5 pétalos blancos".

Pastaza, en los alrededores de la comunidad Huaorani Tarangaro y sendero a Tiweno, 380 m, 1°24' S, 77°23' W, bosque húmedo tropical; áreas de tierra firme y valles temporalmente inundados, (fl male), 22 Nov. 2013, **A.J. Pérez et al. 6839** [QCA n.s., W], "árbol 8 m; sépalos verdes; pétalos blancos" (see Fig. 5a); – Vía Auca, 110 km al S de Coca, a 10 km del Río Tigüino, sector Cristal, 320 m, 1°15' S, 76°55' W, bosque húmedo tropical; bosque primario; suelos rojos de colinas, (flbuds male), 7 Jan. 1989, **W. Palacios et al. 3431** [FHO, K, MO, QCNE n.s. (dig. photo)], "árbol 7 m; hojas membranosas con el envés gris; botones florales"; – Pastaza Cantón, pozo petrolero "Ramirez", 20 km al S de la población de Curaray, 300 m, 1°32' S, 76°51' W, bosque húmedo tropical; bosque primario, (flbuds male), 21–28 Feb. 1990, **C. Zak & S. Espinoza 4940** [FHO, K, MO, NY], "arbusto 5–7 m; botones florales cremas".

Perú, Loreto, Provincia Loreto, Carretera Oleoducto Secundario entre los Campamentos Bartra 1 y Bartra 4, ca. 200 m, 2°30' S, 75°45' W, (fl male), 15 Sep. 1979, **C. Díaz & N. Jaramillo 1425** [FHO, MO n.s., W], "arbolillo 3 m; flores y yemas florales blancas"; – Maynas Province, Región de Amazonas, Dtto. Las Amazonas, Explornapo Camp, cerca de Sucusari, a lo largo del Río Napo, 100–140 m, 3°20' S, 72°55' W [correct is 3°15'28.9" S, 72°55'2.5" W], bosque en tierra firme, (defl male), 5 Mar. 1991, **J.J. Pipoly et al. 14458** [F n.s. (dig. photo), MO, W], "árbol 7 m × 2 cm; cálices secos marrones"; – Quebrada Yanamono, Río Amazonas above mouth of Río Napo, 130 m, [3°25' S, 72°50' W], non-inundated forest on lateritic soil, (st), 14 Nov. 1979, **A.H. Gentry & N. Jaramillo 28054** [MO], "tree 2" dbh; leaves whitish beneath, not aromatic"; – Distrito de Indiana, Explorama Inn, 115 m, 3°30' S, 72°58' W [correct seems to be 3°30' S, 73°4' W], bosque primario no inundable; suelo arcilloso, (st), 15 Apr. 1992, **C. Grández et al. 3671** [MO], "árbol 5 m, 10,4 cm DAP"; – Distrito Iquitos, Allpahuayo, estación IAP, 150 m, 4°10' S, 73°30' W [correct seems to be ca. 3°57' S, 73°25' W], bosque primario, (flbuds), 15 Oct. 1993, **R. Vásquez et al. 18366** [MO, W], "arbusto 4 m; flores blancas".

Amazonas, Huambisa, Valle del Río Santiago, ca. 65 km N de Pinglo, Quebrada Caterpiza, 2–3 km atrás de la comunidad de Caterpiza, 200 m, [3°50' S, 77°40' W], monte virgen, (fr), 20 Feb. 1980, **V. Huashikat 2149** [MO]; – Río Cenepa, Quebrada Kayamas [not located], 900 ft., [ca. 4°38' S, 78°11' W], monte, (fl male), 14 May 1973, **E. Ancuash 373** [FHO, MO n.s., W], "tree 3 m; leaves lisos; flowers white"; – Río Cenepa, Quebrada Sasa [not located], 910 ft., [ca. 4°38' S, 78°11' W], monte, (fl male), 30 May 1973, **E. Ancuash 489** [FHO, MO n.s., W], "tree 3 m; lvs. lisos, debajo casi blanco"; – Bagua District, Imaza, Comunidad de Yamayakat, 380 m, 5°3'33" S, 78°20'19" W, bosque primario, (fr), 19 Mar. 2001, **R. Rojas et al. 967** [F n.s. (dig. photo), MO n.s., W], "árbol 7 m; frutos verdes".

San Martín, Prov. San Martín, Dtto. Tarapoto, carretera Tarapoto/Yurimaguas near km 10, trail to chacra, 700 m, [ca. 6°28' S, 76°19' W], sandy rocky uplands, montane rainforest, (fl male), 12 Oct. 1980, **M. Rimachi Y. 5366** [MO n.s., W], "4 m; corolla white; filaments yellow".

Pasco, Prov. Oxapampa, Distrito Iscozacán, Palcazú valley, [ca. 10°10' S, 75°10' W], (fr), 1986, **W. Pariona 414** [MO, W]; – same area: (fl male), 15 Oct. 1986, **W. Pariona & J. Ruiz 1022** [F n.s. (photocopy), MO, W]; – Dist. Palcazú, Comunidad Nativa Alto Lagarto – Reserva Comunal Yanasha, 500 m, 10°18'4" S, 75°22'6" W, remanente de bosque primario, (fr), 25 Jul. 2008, **R. Rojas & G. Ortiz 5907** [MO n.s., W], "árbol 6 m; frutos verdes"; – same locality: (fr), 2 July 2009, **R. Rojas & G. Ortiz 6832** [HOXA n.s., MO n.s., USM n.s., W], "arbolito 5 m; frutos verdes"; – Oxapampa, Río Pichinaz, along newly bulldozed road from crest of divide between Río Cacazu and new bridge under construction over Río Pichinaz, 600–800 m, 10°22' S, 75°8' W, steep forested slopes, (fr), 26 Oct. 1982, **R.B. Foster & D. Smith 9434** [F n.s. (dig. photo), FHO, MO, P, W], "small tree, 5 m; somewhat drooping branches; leaves pale below; fruit pale orange"; – Comunidad Nativa Lomalinda-Laguna, Sector Nueva Aldea, 420–430 m, 10°22'48" S, 75°4'59" W, bosque intervenido, sobre suelo de arena blanca, (fl male), 20 Oct. 2005, **A. Monteagudo et al. 10917** [AMAZ n.s., F n.s. (dig. photo), HUT n.s., MO n.s., MOL n.s., USM n.s., W], "árbol 7 m; flores blancas".

Madre de Dios, Manu Province, plot at Collpa de Blanquillo, Rio Madre de Dios, SE quebrada, 250 m, 12°27' S, 70°41' W, (st), 13 Oct. 1994, **P. Núñez et al. 16561** [CUZ n.s. (dig. photo), MO n.s.]; – Tambopata Province, Los Amigos Biological Station, Madre de Dios River, ca. 7.0 km upriver from mouth of Río Los Amigos, Trocha Castañal, 270 m, 12°34.175' S, 70°6.069' W, lowland tropical to subtropical moist forest; upland terrace forest, from sloped terrain to flat terrace; soil sandy, clay, (fr), 20 Nov. 2002, **A.P. Maceda 216** [BRIT, MOL n.s., USM n.s.], "árbol 20 m; las hojas y los frutos muy lanudos o peludos; frutos inmaduros redondos"; – same locality: (yfr), 9 Nov. 2001, **P. Centeno & J.P. Janovec 16** [MOL n.s., BRIT n.s. (dig. photo), USM n.s., W 2×], "árbol 20 m; corteza viva color negro; frutos inmaduros, achatados, con bastante pilosidad gruesa marrón; sépalos verdes-marrones con pilosidad"; – same area and data: trocha Aerodromo, (fr), 10 Dec. 2001, **P. Centeno & J.P. Janovec 229** [MOL n.s., BRIT, USM n.s.], "árbol 6 m, DAP 35 cm; frutos inmaduros, color marrón, redondos"; – Tahuamanu, Alegria Tropical, 200 m, UTM 488500E/8668900N [12°2' S, 69°6' W], rain forest, (st), 15 Jul. 1998, **F. Cornejo et al. 3556** [CUZ n.s. (dig. photo)], "árbol 15 m"; – Tambopata, Madre de Dios River, Tres Islas, 200 m, UTM 454500E/8618160N [12°30' S, 69°25' W], tropical rain forest, (st), 20 Aug. 1998, **M.P. Núñez-V. et al. 22865** and **23131** [CUZ n.s. (dig. photos)]; – Boca Paríamanu, 200 m, [ca. 12°26' S, 69°16' W], tropical rain forest, (st), 15 Sep. 1999, **M.P. Núñez-V. & A. Peña Cruz 27173** [CUZ n.s. (dig. photo)], "tree 7 m, 7.4 cm DBH"; – Lago Valencia, 200 m, [12°26' S, 68°49' W], (st), 13 Jul. 1999, **M.P. Núñez-V. et al. 26372** [CUZ n.s. (dig. photo)], "árbol 11 m, 11,5 cm dbh"; – Tambopata, Tambopata River, Jorge Chavez, 1 hour from Loero, 180 m, UTM L19 488500E/8599500N [12°40' S, 69°6' W], *Bertholletia* uplands, (st), 15 Sep. 1998, **M.P. Núñez-V. et al. 25152** [CUZ n.s. (dig. photo)], "tree 7 m, 8 cm DBH"; – Santuario Nacional Pampas del Heath, Quebrada Palma Real Grande, 210 m, 12°57'11" S, 68°54'48" W [correct seems to be 12°40' S, 68°56' W], bosque de rivera, (fr), 22 Apr. 1996, **H.M. Aguilar & D. Castro 651** [MO n.s., W], "árbol 10 m; con frutos"; – Tambopata, 280 m, 12°49' S, 69°18' W, tropical moist forest on sandy 'tierra firme' soil, (fr), 22 Feb. 1984, **A.H. Gentry et al. 46012** [FHO, MO], "tree; fruits green with brown pubescence"; – zona reservada de Tambopata, Laguna de Cocococha, cerca al puerto, 280 m, 12°49' S, 69°18' W, (fl male), 12 Aug. 1990, **C. Reynel & E. Meneses 5067** [MO], "árbol 5 m × 15 cm; botones florales amarillentos"; – Tambopata Nature Reserve, junction of Río La Torre and Río Tambopata, Swamp Trail, 250 m, 12°50' S, 69°17' W, (st), 27 May 1987, **A.H. Gentry & N. Jaramillo 57767** [CUZ n.s. (dig. photo), MO], "tree 19.8 cm dbh"; – same locality: "swamp tree plot", (st), 30 May 1987, **A.H. Gentry & N. Jaramillo 57942** [MO], "tree 19 cm dbh; flowers white"; – Río Tambopata, Explorer's Inn reserve, 206 m, 12°50' S, 69°17' W, bosque primario tropical lluvioso, (flbuds), 22 Sep. 2003, **A. Monteagudo et al. 6096** [F n.s. (dig. photo), MO n.s., W], "arbusto; botones verdes"; – Campamento Explorers Inn, 270 m, 12°47'0" S, 69°41'0" W [correct is 12°50' S, 69°18' W], bosque primario, (st), 29 Sep. 1998, **R. Vásquez et al. 25752** [MO n.s., W], "árbol, DAP 10 cm"; – Tambopata Tourist Camp at junction of Ríos Tambopata and La Torre, 280 m, 12°49' S, 69°43' W [correct is 12°50' S, 69°18' W], tierra firme tree plot, (st), 25 Jul. 1985, **A.H. Gentry et al. 51325** [FHO 2×, MO], "tree 18 cm dbh".

Bolivia, **Pando**, Prov. Nicolás Suárez, Municipio Bolpebra, concesión forestal IMAPA, parcela permanente de monitoreo 8, 270 m, UTM 19L 481319/8777837 (11°3'21.16" S, 69°10'15.73" W), bosque amazónico con árboles emergentes de *Bertholletia excelsa* hasta 50 m; terreno ondulado, con suelo rojizo y con manchas de tacuarales; sotobosque dominado por *Geonoma deversa* y *Pausandra trianae*, (fr), 6 Jul. 2007, **M. Toledo & H. Rutths 2342** [LPB n.s. (dig. photo), USZ n.s. (dig. photos)], "árbol 10 m; corteza externa negruzca, con lenticelas, la interna rojiza; madera crema"; – km 17 de Cobija a Campo Ana, (label in MO: Barsola, entre Cobija a Campoana), 280 m, [ca. 11°10' S, 68°50' W], bosque alto, húmedo tropical, terreno ondulado (label in MO: bosque secundario húmedo), (flbuds), 20 May 1977, **E. Meneses 606** [BOLV n.s., LPB, MG, MO], "20 m, 30 cm DAP; fuste cilíndrico con nudos; corteza externa lisa; madera mediana blanca; garrón pequeño (label in MO: "alt. vástago 23 m, DAP 30 cm; tronco cilíndrico con pequeñas nudosidades; corteza lisa, ligeramente áspera"); – Río Tahuamanu, Estación Biológica Tahuamanu, campamento San Sebastián, SW de Cobija, sur de la carretera hacia Extrema, 4 km NW de Rutina, 280 m, 11°24' S, 69°1' W, tierra firme, (fr), 21 Feb. 2000, **J.T. Anderson 469** [F n.s., LPB n.s. (dig. photo)], "tree 20 m"; – Prov. N. Suárez, S. Pedro [not located], 240 m, bosque húmedo subtropical (label in INPA: bosque tropical alto, terreno ondulado), (fl male), 20 Oct. 1977, **W. Terceros & E. Meneses 1412** [BOLV n.s., INPA n.s. (dig. photo), MO 2×, USZ n.s. (dig. photo)], "15 m, DAP 20 cm; copa mediana; corteza externa con pequeñas lenticelas; sabor astringente; madera dura fibrosa; flores color perla"; – Prov. Nicolás Suárez, Concesión de Empresa Maderera IMAPA [not traced], bosque, (yfr), 23 Nov. 2000, **G. Torrico 1379** [LPB n.s. (dig. photo), W], "arbolito 18 m".

Brasil, Amazonas, Rio Negro, São Gabriel, [0°8' S, 67°5' W], beira do rio, (fl male), 21 May 1948, **G.A. Black 48-2838** [COL n.s. (dig. photo), GH, IAC, IAN, K, NY, P, U, UC], "árvore 15 m; flores brancas"; – vicinity of Rio Uatumã, BR-174 estrada Manaus/Caracará, km 97, ramal da estrada da Hidrelétrica de Balbina km 7, à 600 m da margem da estrada, lado direito, [2°3' S, 59°59' W], mata de terra firme; solo argiloso, (fr), 30 Aug. 1979, **C.A. Cid 943** [FHO, INPA, MG 2×, NY, RB n.s. (dig. photo)], "árvore 20 m × 15 cm diam.; frutos maduros com casca rugosa e peluda de cor alaranjada-escuro"; – Distrito Agropecuário, Fazenda Dimona, Reserva 2303 of the WWF/INPA MCS project, margin of reserve, 72 km N of Manaus, ca. 50–125 m, 2°19' S, 60°5' W, non-flooded moist forest, (yfr), 14 Feb. 1989, **M. Pacheco et al. 189** [FHO, INPA, NY n.s. (dig. photo), W], "treelet 5 m; fruits green"; – Município de Manaus, Distrito Agropecuário da SUFRAMA, rodovia BR-174, km 64, depois 21 km leste na ZF3, Fazenda Porto Alegre, Reserva No. 3402 do projeto Dinâmica Biológica de Fragmentos Florestais, [2°25' S, 59°54' W], mata de terra firme sobre latossolo amarelo, (fr), s.d., **A.J.C. Ferreira et al. INPA/WWF 3402.1767** [INPA n.s. (dig. photo), NY], "fuste 21 m; DAP 15.3 cm"; – same data but: depois 23 km leste na ZF3, Fazenda Esteio, Reserva No. 1301 do projeto Dinâmica Biológica de Fragmentos Florestais, 2°23' S, 59°51' W, mata de terra firme sobre latossolo amarelo, (flbuds), 8 Jun. 1983, **H.J. Martins et al. INPA/WWF 1301.489** [INPA, NY], "fuste 10 m; DAP 16.4 cm"; – Manaus, BR-17 [now BR-174], km 19, [ca. 2°57' S, 60°2' W], terreno firme, arenoso; capoeira fechada, alta (capoeirão), (fr), 2 May 1956, **D.F. Coêlho INPA 3799** [F, K, MG], "árvore 7 m; madeira castanho-clara; casca fina, persistente; frutos ainda verdes"; – Manaus/Itacoatiara, km 26, Reserva Florestal Ducke, 2°53' S, 59°58' W [correct is ca. 2°57' S, 59°57' W], floresta de platô; solo argiloso; sub-bosque, (fl male), 17 Jan. 1997, **P.A.C.L. Assunção 454** [INPA n.s. (dig. photo), K, MG n.s. (dig. photo), MO, NY n.s. (dig. photo), RB n.s. (dig. photo), U], "árvore 12 m × 10 cm DAP; base reta; ritidoma negro; tronco com rebroto (velho); copa quebrada; [tronco] coberto de musgo, aspecto liso, nodoso, com rugosidade elíptico-transversal; desprendimento em placas pequenas e finas; corte antigo formando um gel negro, pegajoso e inodoro"; – same place: próximo a torre, floresta de vertente, (fl female), 5 Sep. 1996, **P.A.C.L. Assunção et al. 375** [INPA n.s. (dig. photo), K, MG n.s. (dig. photo)], "árvore 20 m × 15 cm DAP; base acanalada; ritidoma marrom-escuro a negro, micro-sulcos ocasionais; lenticelas pequenas, circulares agrupadas verticalmente; corte: casca morta negra, < 0,5 mm; casca viva castanho-alaranjada a rosada, 2,5 mm, não-fibrosa; alborno creme-alvo; camada amarela entre casca viva e alborno; cálice ferrugíneo-piloso; sépalas amarelo-pilosas; pétalas alvas, ovário roxo-claro (muito raro), piloso; estigma branco"; – same place: (fr), Mar. 1997, **J.E.L.S. Ribeiro & E. da C. Pereira 1885** [INPA n.s. (dig. photo), K, U, W], "árvore 8 m × 10 cm DAP; base acanalada; ritidoma negro, ± liso, com lenticelas; desprendimento ocasional em lamina finas e pequenas; corte: casca morta negra, 0,5 mm; casca viva 1 mm, alaranjada-rosada-clara, não-fibrosa; alborno creme, oxidando a amarelado"; – same place: (fl male), 12 Feb. 1963, **W. Rodrigues & D. Coêlho 4981** [FHO, INPA, MG n.s. (dig. photo)], "árvore 6 m; flores amarelas"; – same place: (fr), 10 Jun. 1964, **W. Rodrigues & A. Loureiro 5905** [BCTw n.s., FHO, INPA, MG n.s. (dig. photo)], "árvore 15 m, 8 cm diam.; frutos verdes rugosos e pilosos"; – same place: (flbuds female), 27 Aug. 1996, **C.A. Sothers & P.A.C.L. Assunção 905** [INPA n.s. (dig. photo), K, MBM n.s. (dig. photo), SPF n.s. (dig. photo), UEC n.s. (dig. photo)], "árvore 20 m × 15 cm DAP; base acanalada; ritidoma marrom-escuro a negro, micro-sulcos ocasionais; lenticelas pequenas, circulares agrupadas verticalmente; corte: casca morta negra, < 0,5 mm; casca viva castanho-alaranjada a rosada, 2,5 mm, não-fibrosa; alborno creme-alvo; camada amarela entre casca viva e alborno; botões florais: cálice verde com pilosidade marrom-ferrugínea; pedicelo ferrugíneo; corola creme-alva"; – same place: (fr), 27 Sep. 1995, **C.A. Sothers et al. 575** [INPA n.s. (dig. photo), K], "árvore 20 m × 15 cm DAP; base acanalada; ritidoma marrom-escuro a negro, micro-sulcos ocasionais; lenticelas pequenas, circulares, agrupadas verticalmente; corte: casca morta negra, < 0,5 mm; casca viva castanho-alaranjada a rosada, 2,5 mm, não-fibrosa; alborno creme-alvo; camada amarela entre casca viva e alborno; frutos secos pilosos"; – same place: (fl male), 10 Oct. 1996, **C.A. Sothers et al. 910** [B n.s., COL n.s. (dig. photo), F n.s. (dig. photo), IAN n.s., INPA n.s. (dig. photo), K, PEUFR n.s. (dig. photo), UFMT n.s. (dig. photo), VIC n.s. (dig. photo)], "árvore 20 m × 13 cm DAP; base reta; ritidoma negro, micro-fisurado; corte: casca morta < 0,5 mm, negra; casca viva castanho-alaranjada-fosca, 1 mm, seca; alborno creme; camada entre a viva e o alborno amarela, translúcida; cálice ferrugíneo; corola alva, perfumada; estames castanhos"; – same place: Igarapé Acará-Lateral, floresta de campinarana; solo arenoso, dossel, (fr), 27 Mar. 1996, **C.A. Sothers & C.F. da Silva 836** [INPA n.s. (dig. photo), K, RB n.s. (dig. photo)], "árvore 15 m × 11 cm DAP; ritidoma negro, liso, com lenticelas pequenas, alvas a bege; desprendimento em placas pequenas irregulares; tronco bastante variável; frutos imaturos passando a maduros, com pilosidade amarelada-ferrugínea, glabrescentes, com 7–8 sementes; cálice verde-claro, levemente concrescido; pedúnculo ferrugíneo"; – same place: (fr), 4 Jun. 1995, **C.A. Sothers et al. 490** [INPA n.s., K, MG n.s. (dig. photo), NY

n.s. (dig. photo)], "árvore 10 m × 12 cm DAP; base reta; ritidoma negro a marrom-escuro, rígido; desprendimento em placas pequenas, engrossadas; corte: casca morta < 0,5 mm, marrom-escura; casca viva 1,5 mm, acastanhada, não-fibrosa; alburno amarelado; frutos imaturos verdes passando a amarelados, pilosos; cálice amarelado"; – same place: local Ha. 05D, próximo da estrada, [2°57' S, 59°57' W], mata de terra firme, solo argiloso, (fl male), 1 Oct. 1968, **J. Aluísio 201** [MER n.s., INPA, MBM n.s. (dig. photo), UEC n.s. (dig. photo), US], "árvore de 20 m de altura × 26 cm de diam."; – same place: Trilha L-07, km 3,5, 92 m, 2°58'34" S, 59°55'48" W, solo muito argiloso, (fl), 3 Oct. 2001, **C.V. Castilho et al. 101** [INPA n.s. (dig. photo)], "árvore de sub-dossel, DAP 16,4 cm; base reta; ritidoma marrom"; – Igarapé do Buião, [ca. 3°6' S, 60°2' W], terra firme; solo arenoso, descampado, (fr), 20 Jul. 1964, **W.A. Rodrigues & J.C. Chagas 5957** [INPA n.s. (dig. photo)], "arbusto 3 m; frutos verdes, rugosos, recobertos de pelos marrons"; – Mun. de Maués, rio Apoquitaua, acima do lugar São Sebastião, 3°50' S, 57°53' W, campinarana; solo argilo-arenoso, (fr), 27 Jul. 1983, **C.A. Cid et al. 4276** [FHO, INPA, MG n.s. (dig. photo), NY n.s. (dig. photo), RB 2 × n.s. (dig. photo), W], "arbusto 3 m; frutos alaranjados".

Pará, Rio Trombetas, Jazida de Bauxita de Alcoa Mineração, Monte Branco, Acampamento 22, [ca. 1°43' S, 56°27' W], solo argiloso (latossolo amarelo), (fr), 9 Oct. 1982, **J. Revilla et al. 7068** [INPA n.s. (dig. photo)], "árvore 12 m; frutos verdes"; – rio Trombetas, flanco do planalto Saracá, [ca. 1°43' S, 56°27' W], mata de terra firme; solo argilo-arenoso, (fr), 27 May 1978, **N.T. Silva & M.R. dos Santos 4662** [FHO, MBM, MG n.s. (dig. photo), NY, SPF, UB], "árvore 25 m × 35 cm diam.; frutos verdes"; – Obidos, estrada de Curuçambá [EGLER & CAVALCANTE (1963) indicate also "tributary of Rio Branco"], [1°50' S, 55°30' W], in silva terris altis, (fl male), 30 Oct. 1919, **A. Ducke RB 12616** [K, RB n.s. (dig. photo)], "arbor parva; flor albidis"; – rio Branco de Óbidos, igarapé do Cedro, [ca. 1°54' S, 55°31' W], beira da mata nas capoeiras, (fl female, fr), 2 Aug. 1912, **A. Ducke MG 12132** [FHO, MG n.s. (dig. photo)], "árvore pequena; flor branca"; – Villa Braga infra cataractis infimes fluminis Tapajoz (civ. Pará), [4°25' S, 56°17' W], silva non inundabili, (fl female), 14 Oct. 1922, **A. Ducke RB 22304** [K, RB n.s. (dig. photo)], "arbor parva; flor albis"; – Rio Tapajós, Furnas, estrada das cachoeiras inferiores, [ca. 4°35' S, 56°15' W], mata de terra firme, (fl male, yfr), 4 Jan. 1918, **A. Ducke MG 16883** [FHO, MG n.s. (dig. photo)], "árvore apenas mediana; flor branca"; – Region Tapajós, Boa Vista, [ca. 3°50' S, 55°30' W], terra firme, (fr), 22 May 1933, **P. Capucho 584** [F, IAN], "tree 6 m, 25 cm dbh; fruit yellow"; – Boa Vista on the Tapajós River [CAVALCANTE (1963) indicates "Rio Tapajós, Fordlândia"], [ca. 3°50' S, 55°30' W], (fl male), 27 Sep. 1931, **R.M. da Costa 103** [F, IAN], "tree 60 ft."; – upper Cupary [= Cupari] River, plateau between the Xingú and Tapajós Rivers, [ca. 4°5' S, 55°5' W], in high forest, (fl male), Sep. 1931, **B.A. Krukoff 1188** [A n.s., BM, G, K, MICH, MO, NY, P, S, U], "tree 25 ft., 2 inches in diameter breast high; flowers white"; – Ruropolis Presidente Medici, 150 m, 4°0' S, 55°4' W [correct seems to be ca. 4°4' S, 54°56' W], forêt dense de terre ferme, (fr), 24 Jan. 1976, **P. Bamps 5223** [BR, NY, RB n.s. (dig. photo)], "arbre de 18 m de haut; ponctuations dans les feuilles; fruits sessiles, hérissés de polis roux, 5–6 loges à 1 graine"; – Porto de Móz, margem esquerda do Rio Jaraucú [= Jaraçu], [ca. 1°59' S, 52°38' W], terra firme, mata virgem do planalto, espécie dos andares, (flbuds), 13 Oct. 1955, **R.L. de Fróes 32202** [IAN, K, P, R], "árvore 9 m; flores em botão; fruto jovem"; – Altamira, rodovia Transamazônica, trecho Altamira/Itaituba km 25, travessão da estrada 6 com a 8 Lote 22, fazenda Acapú do Sr. Antonio Macario, [ca. 3°17' S, 52°25' W], mata virgem de terra firme, (fl male), 24 Aug. 1978, **R.P. Bahia 110** [MG n.s. (dig. photo), NY], "arbusto 4 m; flor branca"; – Rio Xingú, estrada da Volta [according to EGLER & CAVALCANTE (1963), Ducke was at that time near Altamira; ca. 3°11' S, 52°10' W], capoeira, (yfr), 20 Dec. 1916, **A. Ducke MG 16642** [MG n.s. (dig. photo)], "árvore pequena"; – Melgaço, Floresta Nacional de Caxiuanã, local onde será construída a Estação Científica "Ferreira Penna", [1°44' S, 51°27' W], mata de terra firme com muito tumucã (*Astrocaryum aculeatum*), (st), 2–15 Feb. 1991, **A.S.L. da Silva et al. 2241** [MG n.s. (dig. photo)], "árvore 26 m, 37,5 cm de circ."; – Barcarena, margem esquerda do Rio Murucupi, [ca. 1°30' S, 48°40' W], mata de várzea pouco mexida, (st), 1 Dec. 1983, **A. Lins et al. 199** [MG], "árvore 11,5 m × 30 cm circ."; – Belém, Bosque Rodrigues Alves [Jardim Botânico], [1°26' S, 48°27' W], (fr), 29 Apr. 1949, **T. Guedes 106** [IAN, K, MG n.s. (dig. photo)], "árvore pequena; flor verde; fruto com pelo hispido, solto acastanhado"; – same place: (flbuds), 23 Jun. 1986, **E. Oliveira 7272** [IAN], "árvore 6 m; flor clara"; – same place: (fl male), 18 Aug. 1950, **J.M. Pires 2622** [COL n.s. (dig. photo), IAN, INPA, NY, UC]; – same place: (fr), 27 Apr. 1902, **R. Siqueira [= R.S. Rodrigues] MG 2633** [MG n.s. (dig. photo)]; – same place: (fl male), 5 Aug. 1950, **A. Silva 461** [COL n.s. (dig. photo), IAN, K 2 ×, P], "árvore ou arbusto; flor branca"; – same place: (fr), 4 Jul. 1947, **N.T. da Silva 30** [IAN n.s., INPA, K, R, U, US], "árvore, fruto redondo cinzento manchado de preto"; – same place: (fl female), s.d., **s.coll. s.n.** [RB 83283 (dig. photo), K], "árvore 12 m; flor branca"; – Belém, Horto do Museu Paraense Emilio Goeldi, [1°27' S, 48°29' W], (fl male), 18 Jul. 1957, **P.B. Cavalcante 252** [FHO 2 ×, MG, NY], "árvore 8 m; flor brancacenta"; – same place:

(fl male, female, fr), Aug. 1922, **A. Ducke RB 22310** (= 273, 1st coll.) [INPA, K 2×, RB n.s. (dig. photo)], "arbor parva; flor albis"; – same place: (fl female), Sep. 1936, **A. Ducke 273** [A, F, K, MO, NY, R, S, US], "arbor parva; flor albis"; – same place: (fl female), 23 Aug. 1944, **A. Ducke 273** (2nd coll.) [F n.s., IAN, K, MG n.s. (dig. photo), R n.s.], "árvore pequena; flor branca"; – same place: (fl female, fr), 17 Aug. 1942, **W.A. Archer 7584** [F, FHO, IAN, K, NY], "slender tree; flowers white, scented; fruits brown"; – same place: (yfr), 20 Sep. 1962, **P. Cavalcante 978** [MG], "árvore 10 m"; – same place: (fl female), 26 Aug. 1961, **P. Cavalcante INPA 13722** [FHO, INPA n.s. (dig. photo)], "flores brancas"; – Belém, Hospital Domingos Freire [CAVALCANTE (1963) indicates also "Barão de Mamoré"], [1°27' S, 48°29' W], (fl female, fr), 4 Nov. 1903, **J. Huber 2108** [FHO, MG n.s.]; – Belém, Travessa Barão de Mamoré [CAVALCANTE (1963) indicates also "Hospital Domingos Freire"], [1°27' S, 48°29' W], (fr), 17 Jun. 1903, **R.S. Rodrigues MG 3659** [MG n.s. (dig. photo)]; – EMBRAPA, Reserva Mocambo [see the map in PIRES & SALOMÃO (2000)], [1°28' S, 48°29' W], mata de terra firme, (st), 9 Nov. 1986, **M.R. Cordeiro 2021** [IAN], "árvore 15 m"; – Belém IPEAN, Reserva Aurá, [1°28' S, 48°29' W], (fr), 27 Mar. 1968, **J.M. Pires & N.T. Silva 11483** [IAN], "árvore 12 m"; – Belém, 6 km NE of Instituto Agrônômico do Norte [= IAN], near SNAPP installation, [according to Pedro Lage Viana (MG): 1°23'35" S, 48°26'5" W], (fl female, yfr), 27 Sep. 1942, **M.B. da Silva 110** [GH, IAN n.s., K, US], "medium tree; fls. white"; – Belém IPEAN, Mata do Cafezal [according to Pedro Lage Viana (MG): 1°26'52" S, 48°26'16" W], (fr), 5 Jun. 1968, **J.M. Pires & N.T. Silva 11799** [IAN], "árvore de 15 m"; – Mata da Cia. Pirelli, Fazenda Uriboca [according to Pedro Lage Viana (MG): 1°23'50" S, 48°18'30" W], terra firme, (fr), Jul. 1958, **J.M. Pires 6865** [IAN, K], "árvore 15 m"; – Ilha de Mosqueiro, Furo das Marinhas, [1°10' S, 48°20' W], mata terreno baixo seco, (fr), 18 Mar. 1969, **E. Oliveira 5449** [IAN], "árvore 10 m × 45 cm circ."; – Belém/Brasília Highway, km 32 [W of Santa Isabel do Pará], [ca. 1°18' S, 48°11' W], forest, (fl male), 27 Aug. 1964, **G.T. Prance & N.T. Silva 58900** [FHO, NY], "tree 18 m × 15 cm diam.; bark smooth; corolla and filaments white"; – Colônia Agrícola do Guamá, Sta. Izabel [= Santa Isabel do Pará], Reserva INDA, [ca. 1°18' S, 48°10' W], mata de terra firme, (fl male), 5 Oct. 1967, **J.M. Pires & N.T. Silva 11259** [IAN], "árvore de 25 m; flor branca"; – Colônia 3 de Outubro, entre km 100 da E.F. de Bragança e o Rio Guamá [CAVALCANTE (1963) indicates also "Castanhão"], [ca. 1°18' S, 47°54' W], mata virgem, (flbuds), 23 Aug. 1952, **J.M. Pires et al. 4161** [IAN, INPA, NY]; – Estação Experimental, Peixeboi, E. de F. [estrada de ferro] de Bargança (label in K: Peixeboi ad viam ferream inter Belém do Pará et Bargança), [1°12' S, 47°18' W], silva non inundabili, (fr), 24 Mar. 1927, **A. Ducke RB 22309** [K, RB n.s. (dig. photo)], "árvore pequena; fruto maduro amarelo claro, com polpa doce"; – Bragança, Colônia Benjamin Constant, [ca. 1°3' S, 46°46' W], mata, (yfr), 14 Nov. 1908, **Pessoal do Museu MG 9765** [MG n.s. (dig. photo)], "árvore alta"; – São Miguel do Guamá, rio Guamá e Irituia, [1°38' S, 47°28' W], igapó, (fl male), 22 Aug. 1948, **Dardano & G.A. Black 48-3156** [IAC, IAN, K], "árvore pequena; flor amarela"; – Cap. [Capitão] Poço, Colônia S. José, [ca. 1°45' S, 47°4' W], mata terra firme, (fl male), 11 Aug. 1966, **Rosemiro [= R.S. de Pereira] 40** [MG n.s. (dig. photo)], "árvore 15 m; diâmetro 0,5 m; pétalas alvas"; – Road BR-22, Capanema to Maranhão, km 64, vicinity of Piritoro, [1°33' S, 46°39' W], forest on terra firme, (fr), 3 Nov. 1965, **G.T. Prance & T.D. Pennington 1934** [FHO, GH n.s., K, MG, MO, NY, P, S, UB, US], "tree 10 m × 10 cm diam.; fruit brown tomentose"; – Road BR-22 [now BR-222], Capanema to Maranhão, vicinity of Cachoeira [do Piriá], km 96, [ca. 1°46' S, 46°32' W], forest on terra firme, (fl female, yfr), 27 Oct. 1965, **G.T. Prance & T.D. Pennington 1722** [F, FHO, GH n.s., K, MG n.s. (dig. photo), NY, S, U, US], "tree 6 m × 8 cm diam.; calyx greenish brown; corolla white"; – Ulianópolis, Fundação Floresta Tropical (FFT), área de treinamento e pesquisa do projeto de manejo florestal e exploração de impactos reduzidos, antiga estrada paro o acampamento [Fazenda Cauaxi], [3°46' S, 48°10' W], floresta de terra firme; solo argiloso, (fr), 20 Mar. 2004, **J. Oliveirae et al. 672** [MG n.s. (dig. photo)], "árvore 12 m; frutos imaturos verdes"; – Fazenda Santa Rosa, entrance behind town of Itinga do Pará, W of Belém/Brasília highway, ca. 4°20' S, 47°45' W, forest by logging road, (fr), 26 Oct. 1980, **D.C. Daly et al. D764** [FHO, INPA, MG, NY n.s. (dig. photo), W], "tree 18 m; fruits green, brown-pubescent"; – km 183 da rodovia Belém/Brasília, mata de terra firme, (fr), 12 May 1960, **E. Oliveira 745** [IAN], "árvore 15 m; frutos redondos"; – km 301 a 306 da rodovia Belém/Brasília, mata da terra firme; beira da estrada, (flbuds male), 7 Aug. 1960, **E. Oliveira 988** [IAN, UB], "árvore de 8 m; flores brancas, miúdas".

Amapá, Contagem entre Porto Platon e Serra do Navio, [ca. 0°40' N, 51°45' W], (st), 10 Oct.–15 Dec. 1976, **N.A. Rosa 1309** [MG n.s. (dig. photo)].

Maranhão, Turiaçu, km 6 da BR-106 [? MA-106] Maracaçumé/Sta. Helena, fazenda Maracaçumé Agro Industrial, Grupo Mesbla [not located but probably around 2°5' S, 45°56' W], capoeira, (fl male), 3 Dec. 1978, **N.A. Rosa & E. Vilar 2842** [F, MG, MO, NY], "árvore 15 m, 50 cm circunf.; flor com o cálice verde;

corola rósea"; – ca. 45 km S [W] of Itauna on road from Pinheiro, on hillside W of road, ca. 2°27' S, 44°50' W, old capoeira, (fl male), 18 Oct. 1980, **D.C. Daly et al. D684** [INPA, MG 2×, NY 2×, W], "tree 12 m; buds green, turning white"; – MA. Alto Turí, próximo ao acampamento, [2°54' S, 45°38' W], (fl female), 29 Oct. 1962, **F. Paiva 1 (UFP 1174)** [PEUFR n.s., US], "arv. de fls. alvas e frutos pequenos amarelados"; – Mun. de Monção [correct is either Zê Doca or Araguanã], basin of the Rio Turiaçu, Ka'apor Indian Reserve, 4 km NW of settlement of Urutawy [= Urutawi; its position is given in a small overview map in BALÉE (1994: 3), according to it, it is the small settlement which can be seen via Google Earth at 3°10'35.03" S, 45°54'58.18" W], [ca. 3°9' S, 45°57' W], moist terra firme forest on mild slope, (defl male), 28 Jan. 1985, **W.L. Balée & B.G. Ribeiro 38** [FHO, MG, NY n.s., MO], "tree 33.8 cm dbh; inventory voucher no. 550".

Acre, Mun. de Mancio Lima, estrada do Isac, ca. a 7 km da cidade, ca. 7°37' S, 72°55' W, mata de terra firme; solo argiloso, (fl male), 24 Mar. 1992, **C.A.C. Ferreira et al. 10931** [FHO, INPA n.s. (dig. photo), K, NY n.s., W], "arbusto 4 m; inflorescência pubescente esverdeada"; – Rio Juruá, 1 km upstream from Colônia Rodriguez Alvez, 7°38' S, 72°40' W, steeply sloped varzea/terra firme transition forest, (fl male), 29 Sep.–10 Oct. 1986, **D.G. Campbell et al. 10974** [FHO], "tree 13 cm diam."; – Rio Alto Juruá, Município de Marechal Thaumaturgo, Reserva Extrativista do Alto Juruá, Colocação Ceará, margem esquerda, ca. 9°12' S, 72°44' W, floresta de terra firme; terreno suave ondulado, (fr), 5 Apr. 1993, **M. Silveira et al. 478** [K, NY n.s. (dig. photo), W], "árvore 13 m, pouco frequente; frutos imaturos verdes e maduros amarelo-ferrugíneos"; – Mun. Sena Madureira, 5 km E of Sena Madureira, [9°3' S, 68°43' W], forest on terra firme, (fl female), 3 Oct. 1968, **G.T. Prance et al. 7798** [FHO, INPA, K, M, MG n.s. (dig. photo), MO, NY, P, R, S, U, US], "tree 6 m; corolla cream"; – 4 km E of Sena Madureira, [9°3' S, 68°43' W], forest on terra firme, (fl male), 27 Sep. 1968, **G.T. Prance et al. 7611** [F, FHO, INPA, K, M, MG n.s. (dig. photo), NY, P, R, S, U, US], "tree 18 m × 15 cm diam.; corolla white; stamens cream"; – RBO-AC, F.E.A., Colocação Mapinguari, [ca. 10°15' S, 68°40' W], mata de terra firme; solo argiloso, (fl male), 19 Sep. 1989, **S.B. Barbosa et al. 22** [NY], "árvore 16 m × 30,3 cm; fuste 12 m; casca externa marrom-escuro; casca interna amarelada; espessura da casca 0,4 cm; flores branca e fruto verde imaturo".

Rondônia, Porto Velho, Rio Madeira, Rio Preto e Rio Machado [= Jiparaná], [ca. 8°8' S, 62°52' W], (st), 2 Sep. 1997, **H.S. Pereira & C.R. Souza 0209-029-1997** [RON n.s. (dig. photo)]; – Território do Guaporé, Porto Velho, km 8, [ca. 8°46' S, 63°54' W], mata de terra firme, (fr), 3 Jun. 1952, **J.F. Silva 32** [IAN], "árvore baixa"; – Município de Santa Barbara, rodovia BR-364, km 120, 10 km da Sede da Mineração, 9°10' S, 63°7' W, mata na beira da estrada, (fr), 26 May 1982, **L.O.A. Teixeira et al. 770** [FHO, INPA, MG n.s. (dig. photo), NY n.s. (dig. photo), QCA n.s. (dig. photo), U, W], "árvore de 15 m de altura × 10 cm de diam.; frutos maduros amarelados, comestíveis; sementes pretas"; – Itapuã do Oeste, Floresta Nacional do Jamari, área de manejo da empresa Madeflona, 9°10'45.72" S, 63°0'55.49" W, floresta de terra-firme, aberta com palmeira, (fr), 9. Feb. 2012, **H. Medeiros et al. 974** [NY n.s., RB n.s. (dig. photo), W], "árvore 15 m; frutos imaturos verdes com pelos marrons"; – upper Machado [= Jiparaná] river region, near Tabajara, [8°56' S, 62°8' W], terra firma, (yfr), 23 Nov. 1931, **B.A. Krukoff 1402** [A n.s., BM, F, G 2×, K, MICH, MO 2×, NY, P, RB n.s. (dig. photo), S, U, UC, US, WIS n.s.], "tree 50 ft., 1.5 ft. in dbh"; – Porto Velho, Jaci-Paraná/Mutum-Paraná, [ca. 9°39' S, 64°56' W], (defl male), 31 Jan. 1997, **Martins & F. Almeida 3101-236-1997** [RON n.s. (dig. photo)]; – same data: (st), **Martins & F. Almeida 3101-050-1997** [RON n.s. (dig. photo)]; – Campo Novo de Rondônia, BR-421, [ca. 10°34' S, 63°37' W], (st), 13 Sep. 1996, **H.S. Pereira s.n.** [RON n.s. (dig. photo)]; – Mun. Ji-Paraná, Linha 56, a 45 km da cidade [not traced but somewhere around 10°50' S, 61°58' W], mata de terra firme, solo argiloso, (fr), 4 May 1987, **C.A.C. Ferreira et al. 9019** [FHO, INPA, NY n.s. (dig. photo), W], "árvore 12 m × 20 cm de diam.; frutos pilosos, imaturos verdes".

Bahia, Elísio Medrado, Serra da Jibóia, ca. 1 km do povoado de Monte Cruzeiro, Reserva Jequitibá (área experimental do GAMBA), 600–650 m, 12°52'10" S, 39°28'18" W, floresta higrófila, (fr), 2 Dec. 2004, **J.G. Jardim et al. H 4289** [HUEFS n.s. (dig. photos)], "arvoreta ca. 6 m; folhas cartáceas, discoloreres, verde-escuro na face superior e a face inferior glauca; botões florais esverdeados; frutos maduros laranja" [epidermal papillae are visible on close-up photos which were taken by Luciano Paganucci de Queiroz (HUEFS) in 2021]; – Município de Ilhéus, área do CEPEC (Centro de Pesquisas do Cacau), km 22 da rodovia Ilhéus/Itabuna (BR-415), quadra D, 50 m, [14°47' S, 39°12' W], Região de Mata Higrófila Sul Baiana, (fr), 14 Jul. 1981, **J.L. Hage & E.B. dos Santos 1094** [CEPEC n.s. (dig. photo), MG n.s. (dig. photo)], "árvore 13 m × 20 cm; frutos imaturos verdes"; – same data: (fr), 30 Sep. 1981, **J.L. Hage & H.S. Brito 1403** [FHO 2×, MG], "árvore 8 m × 20 cm diam.; frutos imaturos verdes"; – same data: (fl male), 13 Nov. 1984, **T.S. dos Santos 3944** [CEPEC n.s. (dig. photo), HUEFS n.s. (dig. photo), MBML n.s. (dig. photo), RB n.s. (dig. photo), SPF n.s. (dig. photo), UFRN n.s. (dig. photo)], "árvore 12 m × 20 cm; flores brancas

perfumadas; anteras cremes; frutos imaturos verdes"; – sup. Almada, [ca. 14°46' S, 39°3' W], (defl male), Mar. 1822, **L. Riedel 661** [NY, US]; – Mun. de Una, Reserva Biológica do Mico-Leão (IBAMA), entrada no km 46 da rod. BA-001 Ilhéus/Una, 8–10 kms na estrada que margeia ao Rio Maruim, 15°9' S, 39°5' W, Região da Mata Higrófila Sul Baiana, (fr), 6 Jun. 1996, **A.M. de Carvalho et al. 6215** [CEPEC n.s. (dig. photo), NY, W], "árvore ca. 5 m; folhas discolores com face inferior alvacentas; frutos imaturos verdes com indumento ferrugíneo"; – Mun. de Una, Fazenda São Rafael (atual Faz. Dendhevea), [according to PINTO & RYLANDS (1997): 15°14' S, 39°13' W], mata, (fr), 12 Dec. 1968, **T.S. dos Santos 304** [FHO, MG n.s. (dig. photo)], "árvore 10 m × 8 cm diam.; frutos verdes"; – same locality: (fl female), 29 Oct. 1969, **T.S. dos Santos 461** [FHO, MG], "árvore 15 m × 18 cm; flores com sépalas cremes; pétalas arroxeadas; ovários cremes e pilosos"; – same locality: (fl male), 5 Nov. 1969, **T.S. dos Santos 473** [CEPEC n.s. (dig. photo), FHO, HUEFS, MG], "árvore 12 m × 10 cm diam.; flores brancas, estigma creme"; – Una, Fazenda Bolandeira, 15°20'24" S, 39°0'28" W, restinga, floresta, (galled), 21 Apr. 2012, **E.N. de Matos & M. Fernandes 3385** [HUEFS n.s. (dig. photo), W], "árvore ca. 5 m; folhas levemente discolores, face abaxial tomentosa; flores brancas"; – without further data, (fr), s.d., **J. Blanchet 853 [853/1251]** [BM, G].

Espirito Santo, Rio Bananal, estrada Rio Bananal a S.J. Tiradente, Córrego primavera, 19.224559° S, 40.347203° W [19°13' S, 40°21' W], capoeirão, (fr), 15 Jul. 2010, **D.A. Folli 6640** [CVRD n.s. (dig. photo), RB n.s. (dig. photo)], "árvore 12 m; fuste cilíndrico; casca áspera; descamação ausente; exsudação incolor; fruto imaturo verde, maduro amarelo"; – Sooretama, Reserva Natural Vale, estrada próximo ao talhão (m), 55 m, UTM 24K 386089/7883515 (19°8'17.90" S, 40°4'59.27" W), mata de tabuleiro; numa área aberta, (fr), 1 Feb. 2019, **G.S. Siqueira 1307** [CVRD n.s., RB n.s. (dig. photo)], "árvore 5 m; cor da exsudação incolor, seiva; fruto verde"; – Linhares, Reserva Natural Vale (Reserva Natural da CVRD), estrada Gávea, ant. X-2, km 18,605, lado esquerdo, 115 m após ipê-rosa, [ca. 19°7' S, 40°0' W], mata de tabuleiro; floresta alta, (fl male), 23 Oct. 1979, **D.A. Folli 146 (= 146/79)** [CVRD n.s. (dig. photo), MG 2×, RBR 2× n.s. (dig. photo), W], "árvore 8 m, DAP 14 cm; fuste 4 m, CAP do fuste 44 cm, cilíndrico; casca áspera; descamação em placas; diâmetro da copa 4 m; flor amarela e botão branco"; – same area: estrada Mac. Pele de Sapo, km 1,2, [ca. 19°7' S, 40°0' W], mata de tabuleiro, (fr), 15 Oct. 1992, **D.A. Folli 1673** [CVRD n.s. (dig. photo), MO, SPF n.s. (dig. photo), W], "árvore com frutos tendendo para amarelado"; – same area: estrada Farinha Seca, km 4, [ca. 19°7' S, 40°0' W], mata de tabuleiro, (yfr), 11 Jan. 1995, **D.A. Folli 2467** [CVRD n.s., SPF n.s. (dig. photo), W 3×], "árvore 18 m; fuste 10 m, cilíndrico; CAP do fuste 45 cm; diâmetro da copa 5 m; casca áspera; descamação ausente; exsudação: seiva, incolor; fruto imaturo verde escuro"; – same area: estrada Municipal do MME, km 1,6, [ca. 19°7' S, 40°0' W], capoeirão, (fl female), 5 Nov. 2001, **D.A. Folli 4109** [CVRD n.s., W 2×], "arbor 10 m; fuste cilíndrico, 5 m de alto; CAP do fuste 26 cm; diâmetro da copa 5 m; casca áspera; descamação ausente; exsudação: seiva, incolor; botão e flor branca"; – same area: [ca. 19°7' S, 40°0' W], mata pluvial, (fr), 15 Oct. 1992, **G. Hatschbach et al. 58112** [C, CEPEC n.s. (dig. photo), HBG, MBM, Z], "árvore 5 m"; – same area: no interior da 'floresta de mussununga' [= muçununga]; solo muito arenoso, pouco folhoso, (fr), 15 Oct. 1992, **J.R. Pirani & G.L. Esteves 2612** [SPF n.s. (dig. photo)], "árvore 7 m; folhas discolores; fruto maduro alaranjado, hispido"; – same area: estrada Aceiro Lasa/Santa Teresinha, 38 m, UTM 24K 395830/7881372 (19°9'29.54" S, 39°59'26.26" W), mata de tabuleiro, (fl male), 22 Oct. 2009, **D.A. Folli 6443** [CVRD n.s., SPF n.s. (dig. photo), W], "árvore 15 m; fuste 8 m, cilíndrico; CAP fuste 39 cm; diâmetro da copa 3 m; casca áspera; descamação ausente; exsudação: seiva, incolor; botão e flor branca"; – same area: estrada do Flamengo, km 11, 52 m, 19.1612 S, 39.9919 W [19°10' S, 40°0' W], mata de tabuleiro, (fr), 7 Apr. 2006, **M.B. Paciencia et al. 2362** [CVRD n.s., ESA n.s. (dig. photo), RB n.s. (dig. photo), UNIP n.s. (dig. photo), W], "arvore; fuste cilíndrico; ritidoma levemente sulcado, claro; descamação ausente; exsudação: seiva, incolor; frutos verdes"; – Vila Velha, Reserva Ecológica de Jacarenema, 20°24'25" S, 40°19'36" W, restinga, (fr), 11 Jul. 2000, **O.J. Pereira et al. 6251** [VIES n.s. (dig. photos)], "planta 6 m"; – Guarapari, Parque Estadual Paulo César Vinha, Setiba, [20°36' S, 40°25' W], restinga; solo plano, arenoso, (fr), 11 Jul. 2000, **A.M. Assis 827** [SPF n.s. (dig. photo), VIES n.s. (dig. photo)], "10 m; fruto verde"; – Aldeia de Setiba, Parque Estadual Paulo César Vinha, Setibão, ca. 30 m da praia, [20°36' S, 40°25' W], interior da mata densa e seca de restinga, (fl male), 2 Dec. 1999, **J.M.A. Braga 5621** [RB n.s. (dig. photo), RUSU n.s.], "arvoreta ca. 2 m, ciófila; folhas papiráceas; botões florais verdes; flores perfumadas alvas"; – Floresta Nacional Pacotuba, Cachoeira de Itapemirim, 20.7500° S, 41.2833 W [20°45' S, 41°17' W], (fr), 1 Jul. 2007, **L.N. Moreira 1** [VIES n.s. (dig. photo)]; – Anchieta, Ciliar às Lagoas, 20°50'17" S, 40°43'18" W [correct is probably 20°47' S, 40°39' W], mata de tabuleiro, (defl male), 10 Oct. 2009, **J.M.L. Gomes et al. 3472** [VIES n.s. (dig. photo)], "planta 7 m".



Fig. 6: Holotype of *Diospyros dolmen* B. WALLN. [W] (see also Fig. 7c).

Rio de Janeiro, Município de Macaé, loteamento Lagomar, [22°14' S, 41°35' W], mata de restinga remanescente periodicamente inundável, (fl male), 29–30 Nov. 1994, **C. Farney & D. Araújo 3437** [GUA n.s., RB n.s. (dig. photo)], "arvoreta 5 m; folhas verdes, discolorés; face inferior com pelos tênues castanho-claro; flores com cálice verde; corola creme pálido; estames creme pálido"; – same data: na área seca, (yfr), **C. Farney & D. Araújo 34373448** [GUA n.s., RB 2× n.s. (dig. photos)], "árvore 6 m; folhas verdes, discolorés; face inferior opaca; cálice verde; pétalos persistentes escurecidos; frutos esverdeados com pelos castanhos" [epidermal papillae are visible on close-up photos of both collections (3437 and 3448) which were taken by Rafaela Campostrini Forzza (RB) in 2021], (cited as "*D. janeirensis*" = *D. apeibacarpus* in LOPES 2001); – Rio das Ostras, restinga da Praia Virgem, [22°32' S, 41°56' W], (fr), 29 Nov. 1999, **H. do N. Braga 691** [RB n.s. (dig. photo)], "arvoreta ca. 3 m, heliófila; folhas coriáceas, discolorés; frutos imaturos verdes".

Without precise data: rodovia Belém/Brasília, mata da terra firme, (fr), 29 Nov. 1959, **E. Oliveira 183** [UB], "árvore de 10 m; frutos peludos"; – without data, (fl male), s.d., **F. Sellow 589** [LE n.s., S, UC]; – (fl male), s.d., **F. Sellow s.n.** [LE, PH, US].

Putative hybrids with *D. apeibacarpus* and *D. gaultheriifolia*: Bahia, Município de Ilhéus, Área do CEPEC (Centro de Pesquisas do Cacau), km 22 da rodovia Ilhéus/Itabuna (BR-415), quadra D, 50 m, [14°47' S, 39°12' W], Região de Mata Higrófila Sul Baiana, (fl male), 22 Dec. 1982, **T.S. dos Santos 3835** [FHO 2×, MG], "árvore 18 m × 29 cm diam.; flores cremes; cálices verdes; frutos imaturos verdes"; – same locality: (st), 6 Feb. 1992, **S.C. de Sant'Ana et al. 182** [NY], "árvore 12 m × 20 cm". – Espirito Santo, Linhares, Reserva Natural Vale (Reserva Natural da CVRD), [ca. 19°7' S, 40°0' W], (st), 1 Feb. 1985, **A. Peixoto et al. 3091** [MO], "árvore DAP 8 cm".

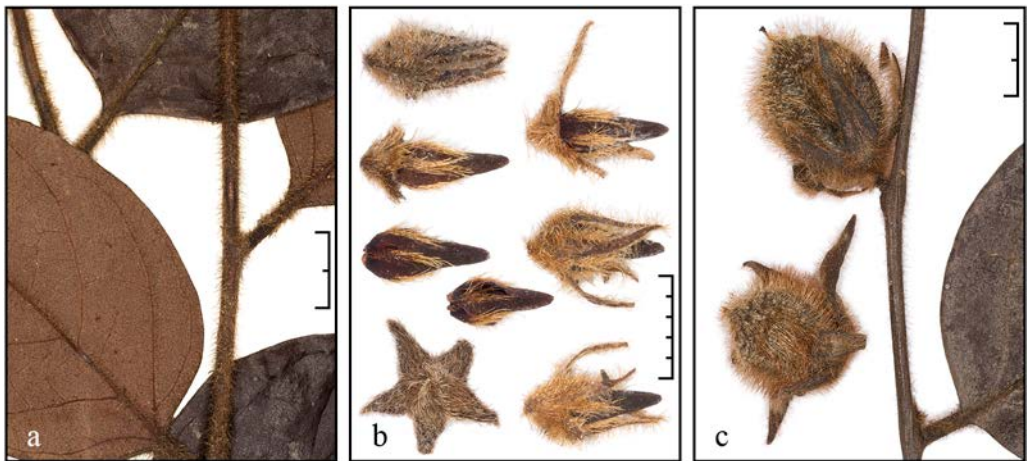


Fig. 7: *Diospyros dolmen*: (a) stem and leaves (from Gentry et al. 56547 [MO]); (b) male flower buds (from Gentry et al. 27664 [FHO]); (c) fruits (from Vásquez & Arevalo 8963, holotype [W]); – scale = 1 cm, except in b: 0.5 cm.

***Diospyros dolmen* B.WALLN.**, Ann. Naturhist. Mus. Wien, B, 106: 244–246 (2005); – [Figs 4, 6–7].

Typus. Perú, Loreto, Prov. Loreto, Nauta, Carretera Nauta/Iquitos, km 5, 200 m, 4°29' S, 73°35' W [correct is: ca. 4°29' S, 73°36' W], bosque primario, colinas medias, (fr), 28 Mar. 1987, **R. Vásquez & N. Arevalo 8963** [holotype: W (Figs 6, 7c), isotype: MO]; "arbusto 4 m; frutos verdes".

For the description and the list of specimens, see the protologue (WALLNÖFER 2005).

D. dolmen grows in the Department Loreto in northeastern Peru at elevations of 130–200 m, and is only known from five collections (two of which are sterile). Its distribution is shown in Fig. 4 of the present paper. It is a white-flowered, small tree up to 6 m tall and was reported from primary forests on sandy laterite or white clay, and from upland forests on well-drained soil.

This species seems to be closely related to *D. capreifolia*. In comparison it displays much larger, elliptic leaves. Additional fertile material is, however, necessary for morphological study, and to ascertain its relationship. – The plant which is shown on figure 97 on plate 5 in TORRES-MONTENEGRO et al. (2017) does not represent *D. dolmen*.

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