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A new species of *Diospyros* from southwestern Amazonia

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Abstract

In the course of a revision of the neotropical Ebenaceae for "Flora Neotropica" and other regional floras, specimens from ca. 75 herbaria have been studied. *Diospyros dalyom* occurring in southwestern Amazonia is here described as new to science.

Key words: Ebenaceae, *Diospyros dalyom*, taxonomy, new species, Flora of South America, Brazil, Bolivia.

Zusammenfassung

Im Rahmen einer Revision der neotropischen Ebenaceae für "Flora Neotropica" und andere Regionalfloren, wurden Herbarbelege aus rund 75 Herbarien studiert. *Diospyros dalyom* aus dem südwestlichen Amazonasgebiet wird hier als neue Art beschrieben.

Introduction

The Ebenaceae are represented in The Americas by single the genus *Diospyros* which comprises about 100 - 130 species. In the course of a revision of Ebenaceae (WALLNÖFER 1999, 2000, 2001 a, 2001 b, in press; WALLNÖFER & MORI in press) for "Flora Neotropica", "Flora of Ecuador", "Flora of the Guianas", "Flora de Paraguay", "Flora ilustrada de la Península de Yucatán" various new species have been detected. The following new species is here presented:

Diospyros dalyom B.WALLN., sp.n.

Diagnosis: Arbor 26 - 35 m alta; diameter in altitudine thoracis usque at 70 cm; petioli (1 -) 1.5 - 2.3 cm longi; laminae foliorum (3 -) 8 - 15 (- 19) cm longae et (1.8 -) 4 - 7 cm latae, chartaceae; alabastra mascula usque at 12 mm longa, 4-mera; sepala 9 mm longa et 5 mm lata; stamina 15; calyx accrescens in fructu, 4 partitus, ca. 5 mm altus et 20 mm latus; fructus immaturus depresso globosus, usque ad circiter 3 cm diametens; exocarpium fructuum majorum in sicco niger, manifestibus exfolians et subsequenter chartaceum.

Typus: Brasil, Acre, Mun. Brasiléia, Basin of Rio Acre, tributary of Rio Purus, Colônia Santo Antônio (Sr. Raimundo Teixeira), ca. 10°56'29" S, ca. 69°15'41" W, terra firme forest on hilly terrain; open canopy; near base of steep slope, (fruits), 21 Oct. 1997, **D.C. Daly, D.G. Silva, L. Lima & A.R.S. Oliveira 9660** [holotype: NY; isotypes: U n.v., + 3 further duplicates to be distributed]; "tree 35 m by 70 cm; trunk fluted at base; outer bark black, pitted, shed in irregular plates; inner bark tan, oxidizing yellow; fruits depressed-globose, to 6 cm diam."

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Tree 26 - 35 m tall; dbh to 70 cm; trunk fluted at base or with buttress roots; outer bark black or blackish spotted, smooth, pitted or granulated, shed in irregular plates; inner bark white or tan, oxidizing yellow; wood very hard, light; crown large ("aparasolada"); twigs subterete, brown to black, usually glabrous, sometimes with scattered remnants of pubescence, the younger longitudinally shriveled when dry; twig apices and buds densely covered with appressed or slightly spreading, entire, straight or slightly curved, light brown hairs; **leaves** alternate, with brochidodrome venation; petioles (1 -) 1.5 - 2.3 cm long, 1.5 - 2 mm thick, brown to black, slightly winged distally, flat or with a longitudinal groove adaxially up to 1 mm broad, shriveled especially on abaxial side; in some individuals completely glabrous, in others with scattered hairs especially on the adaxial side similar to those at the twig apices, soon glabrescent; living leaves dark green, shiny adaxially; leaf lamina broadly lanceolate to elliptic, or slightly obovate (3 -) 8 - 15 (- 19) cm long, (1.8 -) 4 - 7 cm broad, chartaceous, on both surfaces with remote hairs (see above), soon glabrescent, on both sides brown to dark brown, shiny adaxially, dull abaxially when dry; epidermis on abaxial side with light, minute knots; extrafloral nectaria on abaxial leaf surfaces brown to blackish, patelliform, often with a thickened, raised margin, scattered near base and apex of leaves, sometimes also in between near the midvein; leaf apex shortly acute to obtuse, sometimes rounded; leaf base attenuate, tapering for a few millimeters into the petiole; leaf margin entire, flat or slightly revolute, not thickened, glabrous; midvein glabrescent and sunken adaxially, forming a groove (on type collection: proximal part of midvein with scattered, more or less appressed, thick, brown hairs adaxially); abaxial side of midvein markedly prominent, longitudinally shriveled when dry; secondary veins 19 - 23 on each leaf side, prominent on both sides, in the lower two thirds straight or only slightly curved; intersecondary veins only slightly shorter and thinner than the secondary veins; tertiary and quaternary veins prominent on both sides; male **inflorescences** in the axils of leaves, with flowers 2 - 4 cm long (some twigs on the specimen Gonzáles 78 [NY] stopped growth early and developed inflorescences in most leaf axils resembling as a whole larger, up to 7 cm long, few-foliolate inflorescences), 3 - 5-flowered; peduncles 0.7 - 1 cm long; inflorescence axes, pedicels and bracts covered with the same type of hairs as the twig apices; pedicels up to 2 mm long; bracts 2 mm long, ca. 1 mm broad, soon shed; female inflorescences 1-flowered; peduncle and pedicel 3 - 4 mm long; **male flowers** 4-merous; buds up to 12 mm long; calyx up to 7 mm long, quite densely covered with short, thick, usually curved hairs, intermixed abaxially especially on basal and distal parts with longer, only slightly curved hairs; calyx lobes up to 5 mm long and broad, broadly triangular, shortly acute to obtuse distally; sinuses between the calyx lobes enlarged and flexed towards the outside, adaxially less densely covered with more or less spreading, entire, straight or slightly curved, brown hairs; basal parts of the calyx as well as the central part of the calyx lobes adaxially densely covered with appressed, centrifugally (parallel) orientated, brown hairs; corolla bud up to 10 mm long, broadest (ca. 5 mm) near the middle, undivided in the lower two thirds; corolla lobes contorted, abaxially covered with appressed or spreading, entire, slightly curved hairs; corolla tube only with scattered hairs on the outside; stamens 15 (only one flower of Gonzáles 1073 dissected), all attached together at base and to the base of the corolla, 2 - 4 mm long in bud, markedly differing in size, the inner ones shorter than the outer; filaments up to 0.5 mm long, glabrous; anthers (including the 0.5 - 0.8 mm long apical connective appendage) 2 - 3 mm long, 0.5 mm broad; connective of the inner

stamens with long, appressed hairs on the adaxial side, glabrous abaxially; connective of the outer stamens hairy abaxially, glabrous adaxially; rudiment of the ovary consisting of a hairy lump of tissue; **female flowers** unknown; **fruits** solitary in the axils of still persisting or already shed leaves, depressed globose, ca. 2.5 cm long, 3 cm broad (according to the label of the type collection attaining a diameter of 6 cm), 8-locular (only one fruit of Gonzáles 78 [MO] analyzed), green when unripe, black when dry, sparsely covered with light brown to brown, entire, appressed hairs when young, later glabrescent except distally around the 4 stylodia (free style branches); stalk of the fruit 3 - 5 mm long, 2 - 3 mm thick, hairy; outer layer of the larger (still unripe?) fruits markedly exfoliating and then chartaceous, black, smooth, more or less shriveled when dry; calyx on fruits 4-parted, markedly accrescent, ca. 5 mm high and 20 mm broad, black, smooth and nearly glabrous abaxially; calyx lobes broadly triangular, obtuse or rounded distally, ca. 7 mm long, 8 mm broad; entire (proximal) part of the calyx ca. 3 mm long, with prominent longitudinal edges coming down from the sinuses abaxially; sinuses between the calyx lobes enlarged and flexed towards the outside, quite densely covered with more or less spreading, entire, straight or slightly curved, brown hairs adaxially; parts of the calyx (on adaxial side) closely adhering to the fruit, densely covered with appressed, centrifugally (parallel) orientated, brown hairs; margins of the sinuses as well as the proximal parts of the calyx lobes flat or enrolled towards the inside (adaxial side); seeds enclosed in the fruits, and therefore, not available for study.

Paratypes: Bolivia, Santa Cruz, Prov. Ichilo, Reserva Forestal "El Choré", 240 m, [ca. 16°30' S, 64°10' W], bosque humedo subtropical, (male flowers), 1976, **A. Gonzáles 1073** [MO]; "corteza externa lisa con manchas negruscas, interna blanca, luego amarilla; sin leche; madera liviana"; vernacular name: "caki"; -- same area: (NY: male flowers, MO: young fruits), 13 Dec. 1976, **A. Gonzáles 78** [NY, MO, USZ n.v.]; "arbol 26 m, 70 cm DAP; tronco cónico recto; corteza externa café clara, interna blanca amarillenta; copa grande aparasolada; follaje verde oscuro; flores axilares, pequeñas; fruto globoso"; vernacular name: "kaqui"; use: "obras de carpinteria, mubeles, ebanisteria, interiores etc." -- same area: (sterile), 14 Jul. 1976, **A. Gonzáles 72** [LPB, USZ n.v.]; "26 m, 71 cm DAP; tronco cónico recto; corteza externa color café claro, corteza interna blanca amarillenta; copa grande aparasolada; follaje verde oscuro; flores axilares pequeñas; fruto globoso"; vernacular name: "Kaqui"; use: "obras de carpinteria, muebles, ebanisteria, cajoneria, obras interiores, torneria"; -- same area: Reserva Forestal El Choré, Río Ibabo, bosque experimental "Elias Meneces", Líneas 5 & 6 del inventario florestal, 180 m, 16°35' S, 64°31' W, bosque húmedo subtropical, terreno plano, ocasionalmente inundado, (fruits), 16/18 Aug. 1990, **D. Neill & R. Quevedo 9390** [CTES, G, K, LPB, MO, NY, QAME n.v., QCNE n.v., U, USZ n.v.]; "arbol de 30 m, 70 cm DAP; tronco no cilíndrico; raíces tablares; corteza negra, granulosa; madera muy dura; hojas brillantes en el haz; frutos inmaduros verdes"; vernacular name: "caqui" o "kaki".

Etymology: The name has been coined arbitrarily (see: GREUTER et al. 2000: Art. 23.2). The first part of the name contains the family name of D.C. Daly (NY), who collected the type together with other botanists. Daly is a specialist of neotropical Burseraceae and is gaining merits due to his field work and collecting activities in remote areas of Amazonia.

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