

***HIOCOCCA PLOWMANII*, A NEW SPECIES ENDEMIC TO THE COASTAL VEGETATION OF NORTHEASTERN BRAZIL, AND A REALIGNMENT OF *CHIOCOCCA NITIDA* (RUBIACEAE)**

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ABSTRACT: *Chiococca plowmanii* Delprete (Rubiaceae), a new species endemic to the coastal dunes and restinga vegetation of northeastern Brazil, is here described and illustrated. In view of the recent observations, an amended description of *C. nitida* Benth. is presented. In addition, the distinction between *Chiococca* L. and *Salzmannia* DC. is re-evaluated, taking into account the peculiar features of *Chiococca nitida* and *C. plowmanii*.

KEY WORDS: *Chiococca*, *Salzmannia*, Chiococceae, Rubiaceae, Brazil.

RESUMO: *Chiococca plowmanii* Delprete (Rubiaceae), uma nova espécie endêmica das dunas costeiras e da vegetação de restinga do nordeste do Brasil, é aqui descrita e ilustrada. Visando observações recentes, uma descrição emendada de *C. nitida* Benth. é também apresentada. Adicionalmente, a distinção entre *Chiococca* L. e *Salzmannia* DC. é reavaliada, levando em conta as características peculiares de *Chiococca nitida* e *C. plowmanii*.

PALAVRAS-CHAVE: *Chiococca*, *Salzmannia*, Chiococceae, Rubiaceae, Brasil.

INTRODUCTION

While working on floristic treatments of South American Rubiaceae, I came across an undescribed species from the coastal vegetation of northeastern Brazil that, because of its set of reproductive characters, could be positioned either in *Chiococca* L. or in *Salzmannia* DC., as traditionally circumscribed. Several collections of the undescribed species have been determined by specialists as *Chiococca nitida* Benth., with which it could be easily confused because of its reduced racemose inflorescences (vs. capitate in *Salzmannia*) and pubescent filaments (vs. glabrous in *Salzmannia*), characters traditionally used to characterize *Chiococca*. However, the undescribed species also has basifixed anthers, style with two linear branches, and single-seeded fruits, all characters historically used to characterize the genus *Salzmannia*. Because of this new species, the delimitation of the two

genera needs to be re-evaluated, and their generic descriptions need to be emended.

According to Hooker (1873), Baillon (1880), Mueller Argoviensis (1881), and Schumann (1891), *Salzmannia* can be distinguished from *Chiococca* by having capitate inflorescences with leaf-like bracts (vs. racemose or rarely single-flowered, and without leaf-like bracts in *Chiococca*), 4-merous flowers [vs. (4-)5-merous in *Chiococca*], basifixed anthers (vs. dorsifixed near the base in *Chiococca*), style with two linear branches (vs. undivided, clavate, or with two minute, connivent, usually unequal, lobes to 0.3 mm long in *Chiococca*), glabrous filaments (vs. pubescent in *Chiococca*), and terete ovary (vs. compressed or terete in *Chiococca*). Due to the paucity of morphological characters, some contemporary specialists even questioned the separation of *Salzmannia* from *Chiococca* (e.g.,

Delprete, 1996; Kirkbride, herbarium annotations and pers. comm.). Because of the doubtful circumscriptions of these and other related genera, a phylogenetic study of the Chiococceae-Catesbaeeae complex, using *trnL* and ITS sequences, has been undertaken. In the molecular phylogenies produced by Motley et al. (2005), *Salzmannia nitida* DC. resulted in an unresolved position. However, in all the analyses *Salzmannia* was found associated with *Erithalis* L. and *Scolosanthus* Vahl, and not closely related to *Chiococca*; therefore, considering also its morphological characters, it is maintained as a separate, monotypic genus.

With the objective of positioning the undescribed ambiguous species, a close examination of *Chiococca nitida* revealed that this species also has basifixed anthers (not dorsifixed as it was reported for the whole genus by some authors), and single-seeded fruits (due to the abortion of one ovule), which was also overlooked by all the specialists (e.g., Steyermark, 1972, 1974; Delprete, 1996). Because of these characters, after a survey within the genus, the new species is confirmed to be most similar, and probably closely related, to *Chiococca nitida*, from which it differs in having a cylindrical to subcylindrical corolla, 0.7 - 1.1 mm wide at mouth (vs. narrowly infundibuliform to narrowly campanulate, 2.7 - 4.5 mm wide at mouth in *C. nitida*), style with two linear branches 1.5 - 2 mm long (vs. style undivided in *C. nitida*), and anthers 1.4 - 1.7 long (vs. 3 - 3.5 mm long in *C. nitida*). An emended description of *C. nitida* is presented below.

Because of the observations presented above, *Salzmannia* is no longer distinguishable from *Chiococca* because of the branched style nor the single-seeded fruits, characters now present in both genera, and the only characters left for its practical distinction from *Chiococca* are the glabrous filaments and the capitate inflorescences with leaf-like bracts. In addition, both *Salzmannia nitida* and the new *Chiococca* species are endemic to restinga vegetation, and are similar in habit and other vegetative features, due to their ecological adaptation to the coastal environment.

Finally, because of the new observations on *Chiococca nitida* and the new species, the generic description of *Chiococca* needs to be

emended, in order to include the style with two linear branches of the new species (undivided or with two minute, connivent lobes in all the other species of the genus), the basifixed anthers, and the fruits that could be either two-seeded in most species, or single-seeded in both *C. nitida* and the new species described below. In addition, because of the recent observations, an emended description and a list of specimens examined of *C. nitida* is presented.

1. *Chiococca plowmanii* Delprete, sp. nov. inflorescentia pauciflora racemosa, antheris basifixis, fructu monospermo ut in *Chiococca nitida*, sed ab illa corolla cylindrica vel subcylindrica ad fauce 0.7 - 1.1 mm ampla (vs. stricto-infundibuliformi vel stricto-campanulata ad fauce 2.7 - 4.5 mm ampla), stylo cum ramulis linearibus 1.5 - 2 mm longioribus (vs. stylo indiviso) et antheris 1.4 - 1.7 mm longis (vs. 3 - 3.5 mm longis) differt.

Type: BRAZIL. Bahia: Mun. Salvador, Salvador, along rd (Av. Otávio Mangabeira = BA-033), from Itapuã to Aeroporto Dois de Julho, at traffic circle (intersection with Av. Luis Viana Filho), ca. 12°55'S, 39°21'W, near sea level, relict area with high dunes, 24.II.1985 (imm. fr), *Plowman & Britto 13948* (holotype, CEPEC; isotypes, F n.v., NY, U). (Fig. 1)

Shrub 0.5 - 3 m tall, erect, spreading or spindly, sparsely branched, glabrous throughout. Stipules connate at base and with the petioles, shallowly orbicular, 0.3 - 1 mm long, truncate, sometimes microscopically mucronate, with a row of basal colleters inside. Leaves short-petiolate; petioles 3 - 10 (- 12) mm long, 0.7 - 1.5 mm thick; blades round, broadly elliptic, elliptic, ovate, narrowly ovate to obovate, 1.3 - 9 (- 12) × 0.8 - 5.5 cm, round, obtuse, acute or decurrent at base, round, obtuse, acute, or rarely acuminate at apex, subcoriaceous, shiny above, and with a narrowly revolute margin, or papyraceous, matte above, and with a plane margin; secondary veins 4 - 8 each side. Inflorescences one each leaf axil, reduced, simple racemes, 3 - 18-flowered, 1.2 - 6 cm long (including flowers). Flowers with pedicels 3 - 3.5 mm long. Hypanthium oblong-obovoid, 1 - 1.5 × 0.7 - 0.8 mm. Calyx cupular; lobes 4, broadly triangular

to deltoid, to 0.5 mm long. Corolla tubular with spreading lobes, 4.5 - 5 (- 7) mm long (including lobes), greenish-yellow to yellow, sometimes with reddish lobes; tube tetragonal (edges reduplicate), 3.5 - 4.5 (- 5.4) mm long, 0.6 - 0.8 mm wide at base, 0.7 - 1.1 mm wide at mouth; lobes 4, narrowly imbricate (seemingly valvate at a 10× lens), ovate to narrowly ovate, 0.8 - 1.2 (- 1.6) mm long, round at apex. Filaments connate and forming a basal tube 0.5 - 0.7 mm long, inserted above the disk, detached from the corolla tube, free portion 2.1 - 2.8 (- 5.3) mm long, sparse spreading-pubescent in the middle (glabrous above and below); anthers included, linear, 1.4 - 1.7 × 0.2 - 0.3 mm, base round, apex apiculate. Ovary two-locular, with one pendulous ovule each locule. Style exerted among the corolla lobes, glabrous; style branches two, linear, 1.5 - 2 mm long, papillose. Fruits drupaceous, narrowly ellipsoid to narrowly ovoid, 6 - 7 mm long (including calyx), terete to subterete, 3 - 3.5 mm in diam. when dry, passing from pale green to white and finally to purple to blue at complete maturity, pale brown when dry, with one pyrene (due to the abortion of one ovule). Pyrene elliptic in outline, flattened, with a faint longitudinal rim on both sides, 4.5 - 5 × 2.5 - 3 mm. Seed elliptic in outline, ca. 4 × 2.5 - 3 mm, flattened, testa microreticulate.

DISTRIBUTION AND ECOLOGY. *Chiococca plowmanii* Delprete is the only species in the genus restricted to the coastal dunes and restinga vegetation (cf. Delprete, 2000) of northeastern Brazil, with most collections made in the state of Bahia, and two collections studied from the state of Alagoas. Only one collection was available from the state of Paraíba, in an unknown locality, and with the following habitat description: "em tabuleiros (terrenos planos, arenosos, pouco férteis, elevados)". Because of this, it is possible that future collections might discover this species in the coastal vegetation of the other states between Bahia and Paraíba. In Bahia it was collected in dense shrub island of coastal dunes and in white sand campos, from the coast line to about 20 km inland, and from sea level to 20 m altitude.

PHENOLOGY. Flowering specimens were collected in January, February, March, April, July, and October; fruiting specimens in April, May, July, and October.

Specimens examined: BRAZIL. Alagoas: 16 km S of Maceió, 6 m, 09°47'S, 35°52'W, restinga de 6 m de altura, área fechada, 2.II.1982 (fl-fr), Kirkbride 4627 (BR); Mun. Marechal Deodoro, Maçagueira, restinga, 2.VI.1981 (fl, fr), de Lyra et al. 708 (SP). Bahia: Santa Cruz Cabrália, 13.VII.1966 (fl, fr), Belém & Pinheiro 2563 (CEPEC, NY); Mun. Maraú, 18.I.1967 (fl), Belém & Pinheiro 3175 (CEPEC, NY); Mun. Porto Seguro, ca. 13 km on rd Porto Seguro-Santa Cruz Cabrália, 30.IV.1990 (fl-fr), Carvalho & Saunders 3113 (CEPEC, NY); Mun. Salvador, ca. 30 km N of city center, rd to airport, near Itapuã, 23.V.1981 (imm. fr), Carvalho et al. 702 (CEPEC, NY); 11 km S of Santa Cruz Cabrália, sea level, 16°22'S, 39°01'W, 17.III.1974 (fl, fr), Harley 17116 (CEPEC, NY, U); Reserva Biológica do Pau Brasil (CEPLAC), 17 km W from Porto Seguro on rd to Eunápolis, 0 - 20 m, 16°24'S, 39°11'W, 20.I.1977 (fl), Harley 18113 (CEPEC, U); Mun. Salvador, Dunas de Itapuã, near Lagoa do Abaeté, 12°56'S, 38°28'W, 19.X.1984 (fl-fr), Noblick & Britto 3421 (MO, NY); Mun. Salvador, Salvador, along rd (Av. Otávio Mangabeira = BA-033) from Itapuã to Aeroporto 2 de Julho, at first large traffic circle (intersection with Av. Luiz Viana Filho), sea level, 12°55'S, 38°21'W, 27.I.1983 (fl-fr), Plowman 12782 (CEPEC, NY); Santa Cruz Cabrália, 15-20 km N of Porto Seguro and 1.5 km W of rd to Santa Cruz Cabrália, 16°20'S, 39°05'W, 20.II.1988 (fr), Thomas et al. 6191 (CEPEC, NY); Mun. Prado, 4.5 km N of Prado, on coast rd to Cumuruxatiba, 17°20'S, 39°15'W, 21.X.1993 (fl), Thomas et al. 10075 (BR, CEPEC, NY, U), 10082 (CEPEC, NY). Paraíba: Without locality, 29.V.1959 (fl-fr), Coêlho de Morães s.n. (EAN 2132) (U[2]).

CONSERVATION STATUS. Due to the strong human impact on the coastal vegetation of northeastern Brazil, this species is under high threat. The natural vegetation of the surroundings of the city of Salvador, Bahia, where the type specimens were collected, has been almost completely destroyed. Because of

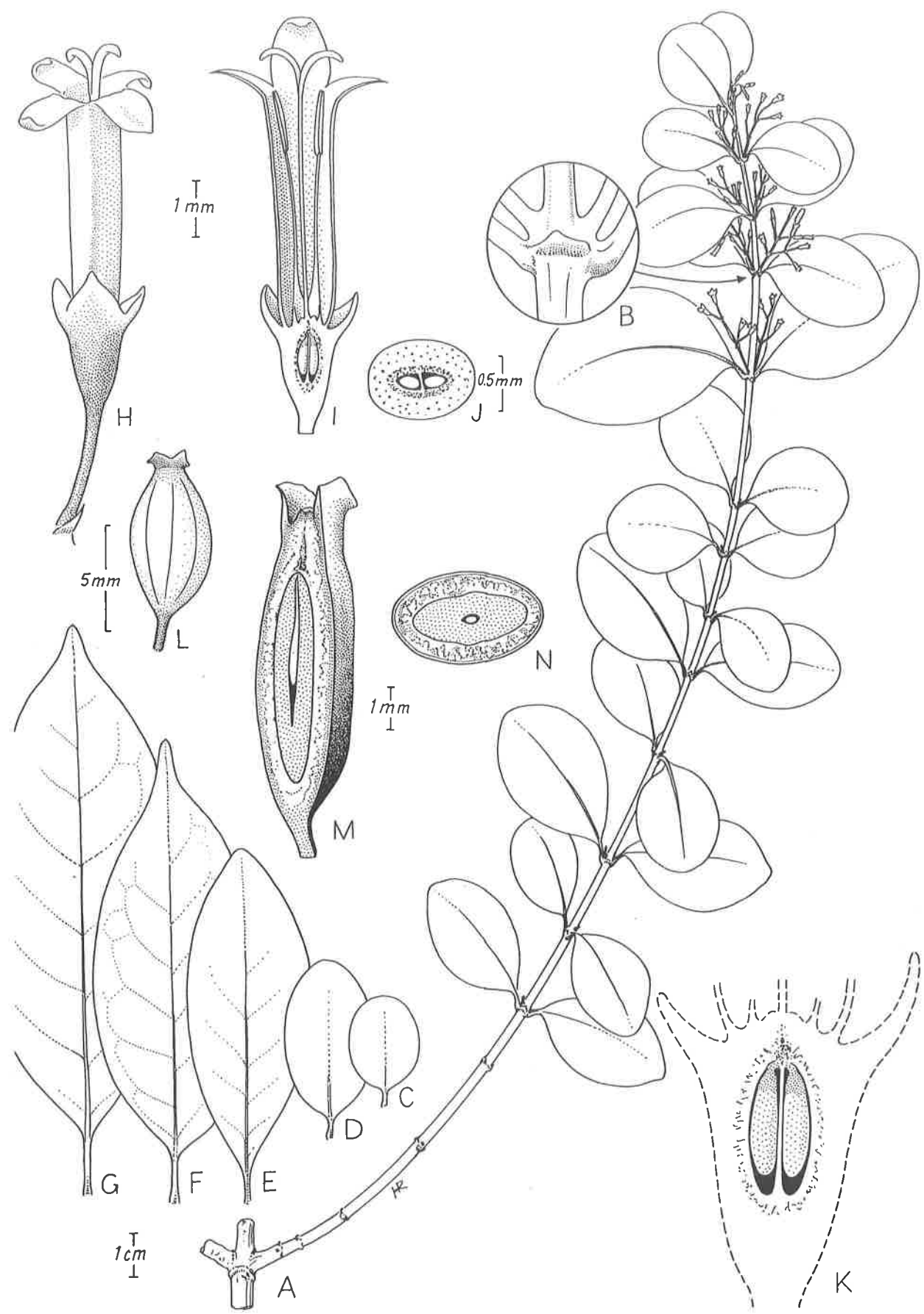


Figure 1 - *Chiococca plomanii* Delprete. A. Habit of flowering branch. B. Stipule. C-G. Variation in leaf size and shape. H. Flower in anthesis. I. Flower in athesis longitudinally dissected (note the two pendulous ovules). J. Ovary, cross section. K. Ovary, longitudinally dissected, with detail of the two pendulous ovules. L-N. Fruit. L. Fruit, side view. M. Fruit, longitudinal section. N. Fruit, cross section. (A-D from Plowman 13948; E from Coelho de Morães s.n. (EAN 2132); F from Harley 18113; G-N from Harley 17116).

this, the coastal dunes and the restinga vegetation of northeastern Brazil require immediate conservation efforts.

EPONYMY. The type specimens and a few other collections (*Carvalho et al.* 702, *Noblick & Britto* 3421, *Plowman* 12782) of *Chiococca plowmanii* were annotated by Plowman as "itapuana," a name that remained unpublished. The specific epithet is dedicated to Timothy C. Plowman (1944 - 1989), indefatigable neotropical collector and specialist in the taxonomy and ethnobotany of *Brunfelsia* L. and *Erythroxylum* P. Br., who has left us too early. An account of his life, intertwined with that of his major professor, Richard Evans Schultes (1915 - 2001), was recently published by Wade Davis (1996).

2. *Chiococca nitida* Benth., Hooker's J. Bot. 3: 236. 1841, emend. Delprete. Type: GUYANA: [near Mt. Roraima, 1839 (Dam, 2002)], *Rob. Schomburgk* 1055 (holotype, K, photo at NY).

Chiococca nitida Benth. var. *amazonica* Muell. Arg., **syn. nov.**, in Mart., Fl. Bras. 6(5): 50. 1881. Type: BRAZIL. Pará: Caripi, juxta Pará [now Belém], VIII.1849 (fl-fr), *Spruce s.n.* (holotype, G-DC, photo at NY).

Chiococca erubescens Wernham, J. Bot. 51: 322. 1913. Type: FRENCH GUIANA: Without locality, s.d., *Martin s.n.* (lectotype, K, selected by Steyermark, 1972: 376).

Chiococca cordata Cowan, Brittonia 7: 411. 1952. *Chiococca nitida* var. *amazonica* f. *cordata* (Cowan) Steyermark., **syn. nov.**, Mem. New York Bot. Gard. 23: 377. 1972. Type: GUYANA: Kanuku Mts., Soirntau, 725 m, IX.1948 (fl), *Wilson-Browne* 230 (Forest Dept. 5707) (holotype, NY).

Chiococca multipedunculata Steyermark., **syn. nov.**, Mem. New York Bot. Gard. 23: 373. 1972. Type: GUYANA: Potaro Distr., Mt. Kanaima, 485 m, 20.VIII.1959 (fr), *Whitton* 120 (holotype, NY; isotype, U).

Chiococca nitida var. *chimantensis* Steyermark., **syn. nov.**, Mem. New York Bot. Gard. 23: 376. 1972. Type: VENEZUELA. Bolívar: Chimantá Massif, SW facing portion of Chimantá-tepui, 1410 m, 15.V.1953 (fl), *Steyermark* 75406 (holotype, VEN; isotypes, F n.v., NY).

Shrubs or treelets to 6 m tall, with scandent or clambering branches, glabrous throughout. Stipules connate at base and with the petioles, suborbicular to broadly triangular at base, mucronate to aristate, 1 - 3.2 × 3 - 4 mm, glabrous, persistent, with a row of basal colleters inside. Leaves short- to long-petiolate; petioles 1 - 25 mm long, 0.3 - 2.5 mm thick, glabrous; blades cordate, ovate, elliptic, narrowly-elliptic, oblong-lanceolate to lanceolate, 3.5 - 20 × 2.5 - 10 cm, cordate, truncate, obtuse to acute-decurrent at base, acute to acuminate at apex, acumen deltoid to narrowly triangular, subcoriaceous, shiny above and with a narrowly-revolute margin, or papyraceous, matte above and with a plane margin; secondary veins 6 - 12 each side side. Inflorescences 1 - 3(-4(-5)) each leaf axil, reduced, simple (rarely compound) racemes, 5 - 25-flowered, 1.2 - 8.5 cm long (including flowers); peduncle 2.5 - 53 mm long, glabrous or sparsely puberulent; bracts, when present, scale-like, deltoid to narrowly triangular to lanceolate, 0.5 - 0.9 mm long. Flowers with pedicels 0.5 - 2 mm long, stout. Hypanthium oblong-ellipsoid, 1.5 - 2.5 mm long, glabrous or puberulent. Calyx cupular, lobes 4, ovate to lanceolate, 0.4 - 1.5 mm long, acute at apex, glabrous. Corolla narrowly funnellform to narrowly campanulate, 6.5 - 14.5 mm long, pale green to greenish-yellow; tube obconical, 5 - 12 mm long, 0.5 - 1.5 mm wide at base, 2.7 - 4.5 mm wide at mouth, glabrous outside, glabrous or sparsely puberulent at base inside; lobes 4, broadly-ovate, oblong-ovate to narrowly triangular, 1.3 - 2.5 × 1.5 - 2.5 mm, obtuse to acute at apex. Filaments connate and forming a basal tube 0.4 - 0.6 mm long, inserted above the disk, detached from the corolla tube, free portion 6.1 - 14 mm long, sparse spreading-pubescent in the middle (glabrous above and below); anthers included (sometimes with the tips exerted just above the tube), 3 - 3.5 × 0.2 - 0.3 mm, base round, apex apiculate. Ovary two-locular, with one pendulous ovule each locule. Style slightly longer than the tube, glabrous, undivided, slightly capitate. Fruits drupaceous, oblong-ellipsoid, 7 - 9 × 4 - 5 mm when dry, commonly terete (rarely laterally compressed), 1-seeded (by abortion of one ovule), glabrous, passing from pale green to white to pinkish-red, finally to dark purple, with one pyrene (due to the abortion of one ovule). Pyrene broadly elliptic

in outline, flattened, with a longitudinal rim on both sides, 5.5 - 6 × 4.5 - 5 mm. Seed broadly elliptic in outline, 4 - 4.5 × 3.5 - 3.8 mm, flattened, testa microreticulate.

DISTRIBUTION AND ECOLOGY. *Chiococca nitida*, as here recognized, is a species occurring in the Guyana Shield and northern Amazon Basin, at 50 - 1400 m altitude.

PHENOLOGY. Flowering and fruiting throughout the year.

Selected specimens examined: VENEZUELA: Bolívar: Gran Sabana, ca. 10 km SW of Karaurin Tepui at jct of Río Karaurin and Río Asadon (Río Sanpa), 05°19'N, 61°03'W, 900 - 1000 m, *Liesner 23749* (MO, U); km 13 of rd Kavanayén-St. Elena de Uairén, 1200 m, 23.XI.1980 (fl), *Steyermark 5385* (U); Altiplanicie de Nuria, between camp and Agua Linda, 7 km E of Hato de Nuria, E of Miamo, 400 m, 14.I.1961 (fl), *Steyermark 88457* (NY, U); border of savanna between Los Castillos de Guyana and Piacoa, 5.VI.1960 (fl), *Steyermark 86269* (NY).

GUYANA: Upper Takutu-Upper Essequibo Region, Kamoá Mts., 2 km N of Camp of Kamoá River, 01°32'N, 58°50'W, 520 m, 9.XI.1996 (fl-fr), *Clarke 2986* (NY, U, US); Cuyuni-Mazaruni Region, Paruima, 9 km W, 0.5 - 1 km E of Ararata scrub area, 05°49'N, 61°08'W, 780 m, 6.VII.1997 (fl-fr), *Clarke et al. 5413* (NY, US); Cuyuni-Mazaruni Region, Waukauyengtipu, slope, 05°49'N, 61°11'W, 1300 m, 10.VII.1997 (fl), *Clarke et al. 5540* (NY, US); Cuyuni-Mazaruni Region, Paruima, 5 km N, Aratoi Savanna, 05°51'N, 61°05'W, 760 m, 25.VII.1997 (fr), *Clarke et al. 6128* (US); Cuyuni-Mazaruni Region, Paruima, 1.5 km N, summit of Warimatipu, 05°50'N, 61°03'W, 880 m, 23.VII.1997 (fr), *Clarke et al. 5981* (US); Potaro-Siparuni Region, 2 - 3 km N of Kato Village store-airstrip, off Kato-Kurukabaru rd, 04°41'N, 59°48'W, 690 - 750 m, 17.III.1989 (fl-fr), *Gillespie & Persaud 845* (U, US), 849 (U, US); Upper Takutu-Upper Essequibo Region, SE Kanuku Mts., 03°03'N, 59°25'W, 850 m, 25.VI.1821 (fl-fr), *Gillespie et al. 1821* (NY, US); Potaro-Siparuni Region, Pakaraima Mts., Tay-Klay-O Creek, upstream from juncture with Ireng River and 2.5 km small tributary, 04°50'N, 59°58'W, 650 m, 20.I.1993 (fl, fr), *Henkel et al.*

905 (NY, US); Potaro-Siparuni Region, Pakaraima Mts., Upper Ireng River watershed, E bank Kaatnang River, near base of Malakwalai-Tipu, 04°48'N, 60°12'W, 700 m, 9.VII.1994 (fl), *Henkel & Chin 5518* (NY, U, US); Potaro-Siparuni Region, Pakaraima Mts., Upper Ireng River watershed, Malakwalai-Tipu, summit of NE escarpment, 04°59'N, 60°18'W, 1400 m, 15.VII.1994 (fl), *Henkel & Chin 5649* (NY, US), 20.VII.1994 (fl), 5732 (NY, U, US); Upper Takutu-Upper Essequibo Region, S Pakaraima Mts., Tipuru River, 1 - 2 km upstream from Tipuru village, 04°13'N, 59°33'W, 330 - 360 m, 1.III.1992 (fl-fr), *Hoffman et al. 1125* (US); Kanuku Mts., 3°06'N, 59°24'W, 280 m, 16.II.1985 (fl), *Jansen-Jacobs et al. 266* (NY, U, US); Kamoá River, Toucan Mountain, 01°33'N, 58°50'W, 260 - 360 m, *Jansen-Jacobs et al. 1629* (NY, U); Potaro-Siparuni Region, N Pakaraimas, Mts. Kato, 04°39'N, 59°48'W, 850 m, 28.V.1995 (fl-fr), *Mutchnick 1403* (U, US); Potaro-Siparuni Region, N Pakaraimas, Koa Valley, Annuyeng Creek from mouth to falls, 04°39'N, 59°48'W, 834 m, 10.VI.1995 (fl), *Mutchnick 1626* (US), 1627 (US); Wabuwak, Kanuku Mts., ca. 670 m, IX.1948 (fl, fr), *Wessels Boer 469B* (NY); Potaro District, Mt. Kanaima, 550 m, 20.VIII.1959 (fr), *Whitton 120* (U).

FRENCH GUIANA: Saül, Layon ORSTOM, Antenne EST La Fumée, Nouvelle France Creek, 20.XII.1976 (fr), *Granville 2753* (CAY, NY); Montagne de Kaw, route a 1 km du Camp Caïman, vers le Degrad Lalane, 13.VI.1979 (fl-fr), *Granville 2952* (CAY, U); Montagnes Bellevue de l'Inini, extrémité SW versant NW, 550 m, 15.VIII.1985 (fl, fr), *Granville 7495* (CAY, U[2]); Montagnes Bellevue de l'Inini, extrémité orientale, 600 - 700 m, 3.IX.1985 (fr), *Granville 8035* (CAY, U), Mt. Bellevue de l'Inini, S end, NW slope, 350 m, 11.IX.1985 (fl), *Granville 8149* (CAY, MO, NY, U); Cacao, route de Ste. Marie des Mines, 200 m, 8.X.1965 (fl-fr), *Oldeman 1597* (U, US); Without locality, 11.VI.1969 (fl-fr), *Oldeman B-2380* (NY, U); Route de Kaw, Montagne de Kaw, 04°33'N, 52°10'W, *Prévost & Barthélémy 3690* (CAY, MO, NY), 3747 (CAY, MO, NY, U); Karouany, 1858, *Sagot 311* (NY); Montagne de Kaw Region, summit plateau, near Camp Caïman, 04°33'N, 52°09'W, 50 - 260 m, *Skog et al. 7070* (U, US); Montagne de Kaw, Auberge de Borusse des Cascades, 04°35'N, 52°17'W, 140 m, *Weitzman & Hahn 299* (U, US).

BRAZIL: Pará: Mun. Vigia, Campina do Palha, capoeira da mata antiga, *Black* 50-8699 (U); Ilha do Mosqueiro, near Pará [now Belém], 3 - 9.XI.1929 (fl-fr), *Killip & Smith* 30437 (NY).

Steyermark (1972) recognized three varieties and two formae within this species, using inflorescence length, corolla size, and leaf shapes, and also described *Chiococca multipedunculata* Steyermark., based on the number of inflorescences per each leaf axil. After a careful evaluation of about 120 collections from the Guyana Highlands and the Amazon Basin, I concluded that the characters used by Steyermark to distinguish these subspecific taxa and *C. multipedunculata* are widely overlapping and have no geographical correlation. Therefore Steyermark's three varieties, two formae, and *C. multipedunculata* are here reduced under synonymy under *Chiococca nitida*, and no subspecific taxon is recognized.

CONSERVATION STATUS. Due to its wide geographic distribution, this species is not under immediate threat.

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