



# First record of *Chomelia triflora* (J.H. Kirkbr.) Delprete & Achille (Rubiaceae) from Brazil

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## Abstract

This paper presents the first record of *Chomelia triflora* from Brazil, to date a species only known from French Guiana. After examining herbaria collections and doing fieldwork in the Brazilian Amazon, we found that the species also occurs in and around the Ducke Reserve in the state of Amazonas, Brazil. Our finding increases the data about the Brazilian Amazon and contributes to the better knowledge of *Chomelia* in Brazil.

## Key words

Amazonian forest; species distribution; Guettardeae; flora; taxonomy.

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## Introduction

*Chomelia* Jacq. is one of the largest Neotropical genera of the tribe Guettardeae, Rubiaceae, with 50 to 76 accepted species distributed from Central Mexico to Paraguay (Steyermark 1974, Anderson 1992). Its major centers of diversity are the Andean cloud forests, the Guyana Highlands, and the Atlantic forest of Brazil (Delprete et al. 2010). Thirty-seven species of *Chomelia* have been recorded for Brazil of which 28 are considered endemic (Barbosa and Pessoa 2015). The genus occurs in all Brazilian biomes, but is more diverse in the Atlantic Forest and the Cerrado.

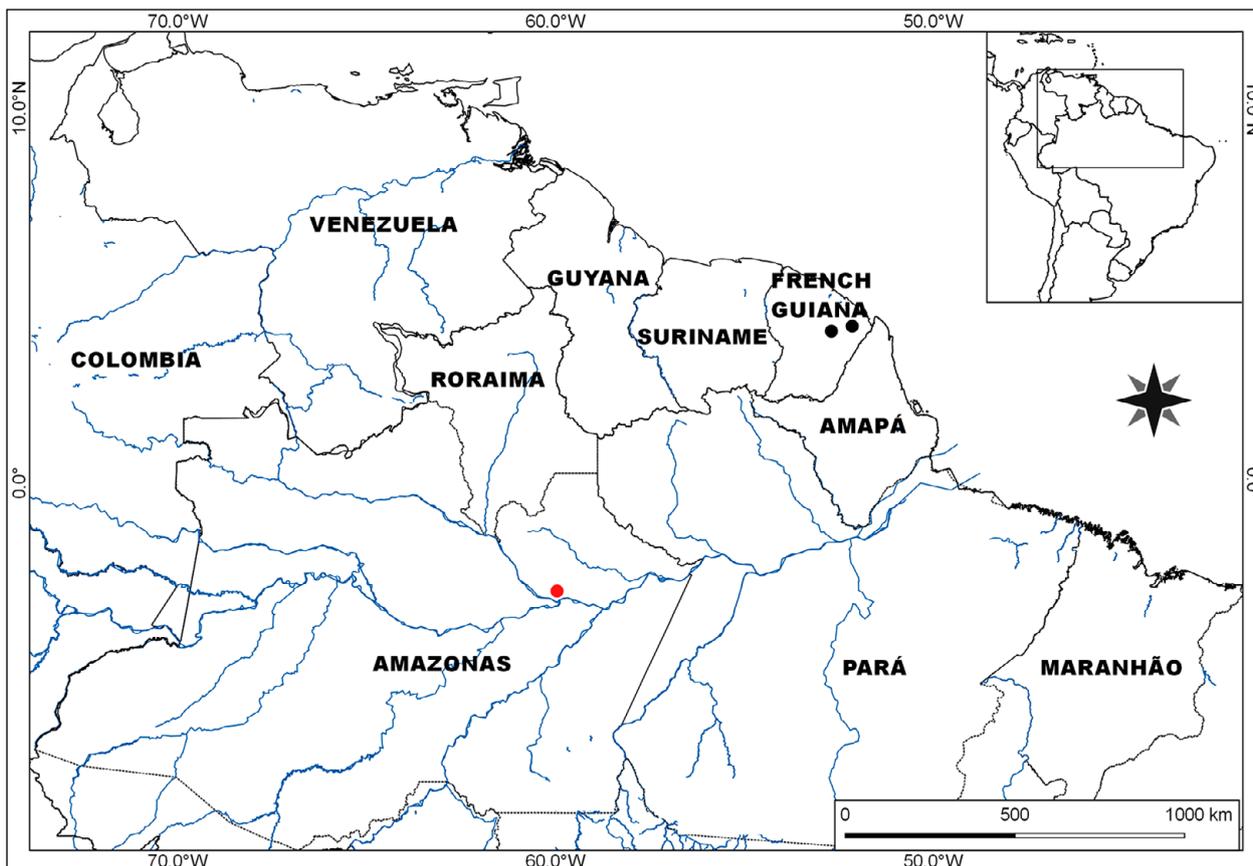
*Chomelia* is characterized by having uniflorous or 3 to many flowered dichasium inflorescences, flowers with clearly lobed calyx, bifurcate stigma branch and fruits with pyrenes 2-locular.

## Methods

During an ongoing revision of *Chomelia* we collected several specimens on field trips in Brazil between 2012 and 2015, and studied these and other collections made available online (indicated/marked with an asterisk) or on loan from several herbaria (BM, BR, C\*, EAFM, F, G\*, GB, HUAM, IAN, INPA, JPB, K, MIRR, MO, NYBG, P, R, RB, S, SP, SPF, UFRR, UEC, US\*). We discovered several specimens of *Chomelia triflora* (J.H. Kirkbr.) Delprete & Achille, collected in and around the Reserva Florestal Adolpho Ducke, near Manaus, Amazonas state, Brazil (Fig. 1).

## Results

The specimens were identified by comparison with the original description and type material (Delprete et al. 2010,



**Figure 1.** Political map of South America showing the current distribution of *Chomelia triflora* in the state of Amazonas (Brazil) and in French Guiana. (Previous known distribution, black spots) of *Chomelia triflora* and the current record (red spot).

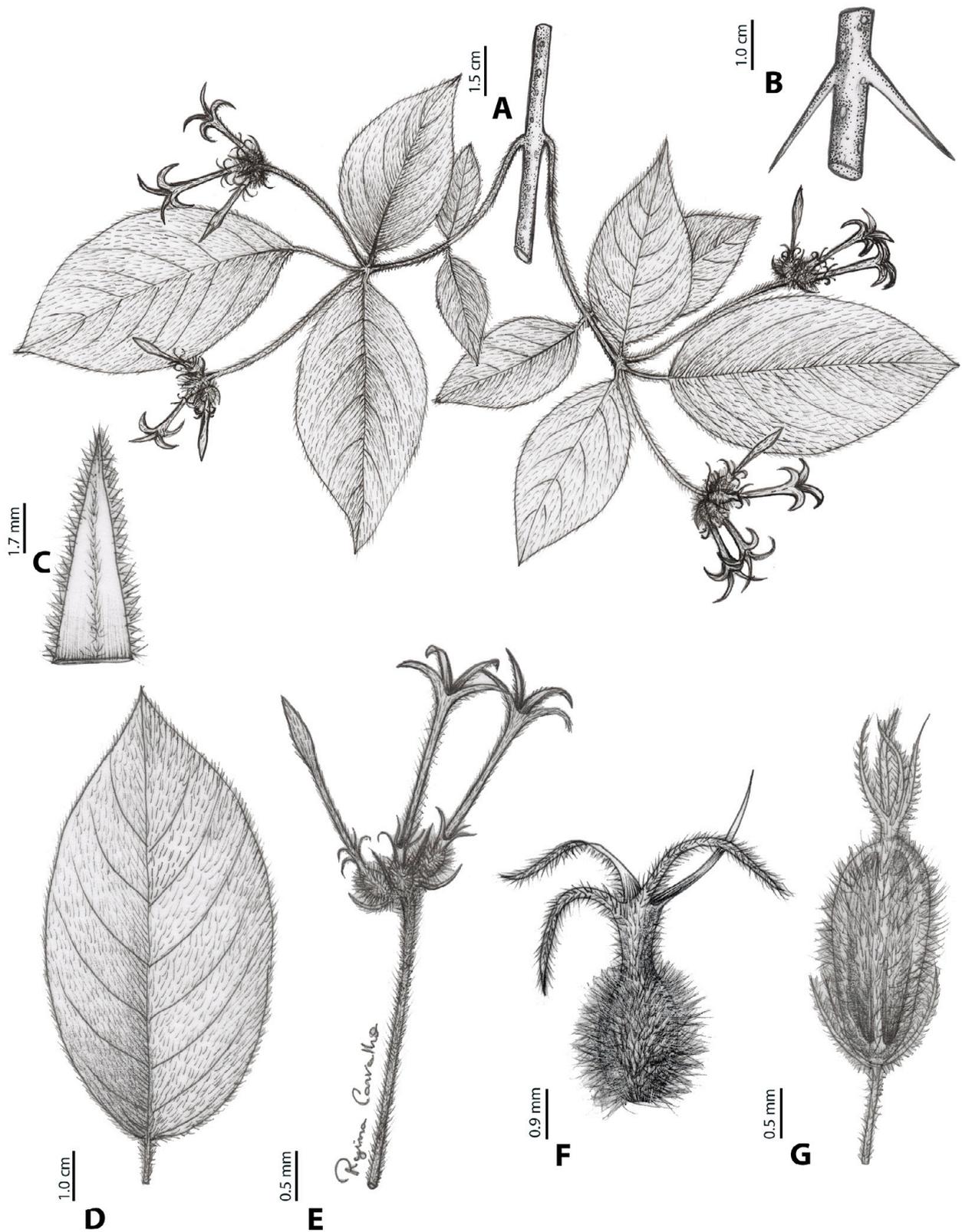
Kirkbride 1997). Until now, *C. triflora* had been considered endemic to the French Guiana, where it was only known from the type locality, the Savane Roche de Virginie (inselberg), and two additional collections from the Nouragues Mountains, associated with rocky outcrops or gallery forests (Delprete et al. 2010). The oldest Brazilian specimens were collected in 1955, but had been erroneously identified as *Chomelia estrellana* Müll. Arg., which is an endemic species from the Atlantic forest and can be readily distinguished from *C. triflora* by its erect lateral branches (vs scandent), stipules 2–4 mm long (vs 5–10 mm) and peduncle 9–12 mm long [vs 20–60(–85) mm].

***Chomelia triflora*** (J.H.Kirkbr.) Delprete & Achille, *Blumea* 55(2): 165–167. 2010. *Antirhea triflora* J.H. Kirkbr., *BioLlania*, Ed. Espec , 6: 396. 1997. Figure 2.

Treelets or shrubs up to 4 m tall, with scandent branches; stems occasionally armed with woody spines. Stipules 5–10 × 2–5 mm, unilobate, narrowly triangular to triangular, persistent. Leaf blades (6–)9–13 × (3.7–)4.5–6 cm, elliptic, ovate or lanceolate, rarely obovate, acuminate to cuspidate at the apex, attenuate at the base, discolorous, chartaceous to papyraceous; pilose to hirsute above; secondary veins arcuate, 5–7(–8) on each side, prominent; petioles (5–)10–15 mm long, velutinous to densely hirsute. Inflorescences axillary, condensed cymes, 2–3(–4)-flowered, pedunculate; peduncles terete, 2–6(–8.5) cm long, hirsute; with 4–6 bracts at the base. Flowers 4-merous, sessile; hypanthium cylindrical, 2–5 ×

0.7–1.5 mm long, densely velutinous or densely hirsute. Calyx lobes lacinate, irregular unequal or two shorter and two longer lobes, subulate to oblong-lanceolate, hirsute outside, glabrous inside, with colleters, ciliate at the margins. Corolla hypocrateriform, white to yellowish white, densely sericeous outside, glabrous inside; tube 1.2–2 mm long; lobes 4–7 mm long, elliptic to ovate, acute and corniculate at the apex, densely sericeous. Stamens 4, included or only the tips exerted, attached near the mouth; anthers apiculate at the apex, caudate at the base. Ovary 2-locular; style 10–14 mm long, included, glabrous, style branches 2, unequal, 1–1.5 mm long, narrowly elliptic to lanceolate. Drupes 12–20 × 5–10 mm when dry, ellipsoid to oblong-ellipsoid, hirsute to sparsely hirsute, costate, purple, calyx persistent, 8–10 mm long, drying rust-brown.

**Material examined.** Brazil. Amazonas: Manaus, Br-17, km 3, 21.XII.1955, fl., *F. Mello & D. Coelho s.n.* (IAN 92229, INPA 3161); Manaus-Itacoatiara, rodovia AM-010, km 26, Reserva Florestal Ducke, 02°53' S, 059° 58' W, 4.V.1994, fr., *J.E.L.S. Ribeiro et al.* 1304 (INPA 177864, K001212188, MO 05056263), 19.I.1996, fr., *M.A.S. Costa* 723 (INPA 185089, UEC 102389), 22.III.1996, fr., *M.T.V. do A. Campos et al.* 575 (INPA 185071, MO 05059674, RB 381063), 30.X.1996, fl., *P.A.C.L. Assunção* 420 (INPA 188937), 7.II.2000, fr., *E.A. Anunciação & E.C. Pereira* 784 (INPA 205207, NY 538629, RB 387664). French Guiana. Savane Roche de



**Figure 2.** *Chomelia triflora* (J.H.Kirkbr.) Delprete & Achille. (A) Leaf blade; adaxial surface (B) fertile branch (C) Stipule; adaxial surface (D) detail of the inflorescence (condensed cymes) (E) Hypanthium (F) Flower (G) Fruit. Illustration by Regina Carvalho, drawn from F. Mello & D. Coelho s.n. (IAN 92229, INPA, RB).

Virginie, Bassin de l'Approuague, 80 m elev., 04°11'N, 052°09'W, 9.II.1991, fl., G. Cremers & P. Petronelli 11718 (Holotype US 3239997; Isotype: P00716685); Station de Nouragues, 04°03'161N, 052°42'161W, 27.III.1992, fl., O. Poncy 889 (MO 5304170); Bassin de l'Arataye,

Nouragues Mountains, 4°03'N, 52°42'W, VI.1989, fr., D. Larpin 633 (MO 05000882).

*Chomelia triflora* is endemic to the Amazon forest. In French Guiana it is associated with rocky outcrops

surrounded by forests or gallery forests (Delprete and Achille 2010). In the Brazilian Amazon it grows in lowland forests (“terra firme”), gallery forests, or forests seasonally inundated by white-water rivers (“várzea”). Flowering specimens were collected from October to March, and fruiting from January to June.

## Discussion

The species seems to be restricted to a few very small populations in undisturbed forests. The two known populations are disjunct, one in French Guiana, in the region of the Nouragues Mountains, and the other near Manaus, Brazil (Fig. 1). These two areas are separated by a region known as the Transverse Dry Belt of Brazil (Davis et al. 1997), which presents a distinct seasonal climate with winter droughts that, when associated with sandy soils, favors the growth of a mosaic of vegetation types, including savanna formations and semi-open to open forests. However, the gallery forest along rivers and even the moist forests of some river basins may have connected the two regions during early Pleistocene, favoring the migration of species from the French Guiana into the Amazon Basin, as suggested by Mori and Prance (1987).

The new record of *C. triflora* presented here increases our knowledge on the distribution of the species but also suggests that its disjunction may be the result of poor sampling between the two localities where it occurs. It is conceivable that *C. triflora* could in fact occur in small populations in other unsampled forest fragments between the two sites. The time gap of 60 years between the collection and correct identification of *Chomelia triflora*, a 4-meter tall treelet, indicates that improving sampling efforts and training more taxonomists, especially in a country of continental dimensions such as Brazil, should be the key to reverse the taxonomic impediment in the Brazilian Amazon (Schum et al. 2007, Bortolus 2008, Ebach et al. 2011, Thomas et al. 2012).

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## Authors’ Contributions:

MCRP collected the data, MCRP, MRVB and CP identified the specimens, MCRP, MRVB, CP and AA wrote the text.

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