Research article

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Novelties in Melastomataceae from the departments Caquetá and Putumayo, Colombia, and keys for the identification of some groups of *Miconia*

Novedades en Melastomataceae de los departamentos Caquetá y Putumayo, Colombia, y claves para la identificación de algunos grupos de *Miconia*

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Abstract

Background and Aims: The Amazonian foothills of the Caquetá and Putumayo departments in Colombia are considered a biodiversity hotspot, particularly regarding the Melastomataceae family. This article describes taxonomic and chorological novelties of Melastomataceae from this region.

Methods: New records of species of the genera *Blakea* and *Salpinga* are documented for Colombia, and two new species of the genus *Miconia* are described and illustrated. Measurements of the vegetative parts and inflorescences were taken from dried specimens, while floral structures were measured from fresh material preserved in alcohol. Keys were constructed for the groups associated with the described species, and their conservation status was evaluated.

Key results: *Blakea spruceana* var. *villosula* and *Salpinga maranonensis* are reported for Colombia for the first time. *Miconia alatinodis* sp. nov. and *Miconia indiwasi* sp. nov. are described: the former is characterised by winged nodes and belongs to section *Cremanium*, while the latter is characterised by amplexicaul leaves and in the traditional classification would fit in section *Miconia*. Two taxonomic keys have been developed to aid the identification of *Miconia* species with terminal inflorescences, amplexicaul leaves and winged nodes. The new species of *Miconia* are currently only known from their type localities, and it is suggested that they be categorised as Vulnerable (VU).

Conclusions: The new chorological records of *Blakea* and *Salpinga* represent an expansion of the distribution of taxa previously known only from Peru and Ecuador. The two new species of *Miconia* are thus far only found in the Caquetá department, which confirms the results of previous studies indicating high plant diversity and endemicity in the Amazonian foothills of southern Colombia.

Key words: amplexicaul leaves, *Blakea*, endemism, *Salpinga*, taxonomy, winged nodes.

Resumen

Antecedentes y Objetivos: El piedemonte amazónico de los departamentos Caquetá y Putumayo, en Colombia, es considerado un área de alta biodiversidad de plantas, especialmente de la familia Melastomataceae. En este artículo se aborda la descripción de novedades taxonómicas y corológicas de Melastomataceae procedentes de esta región.

Métodos: Se documentan, para Colombia, registros nuevos de especies de los géneros *Blakea* y *Salpinga*, y se describen e ilustran dos especies nuevas de *Miconia*. Para las descripciones se realizaron medidas de las partes vegetativas e inflorescencias a partir de material seco, mientras que las estructuras florales fueron medidas a partir de material fresco preservado en alcohol. Se establecen claves para los grupos asociados a las especies descritas y se evalúa su estado de conservación.

Resultados clave: Se reportan *Blakea spruceana* var. *villosula* y *Salpinga maranonensis* para Colombia. Se describen *Miconia alatinodis* sp. nov. y *Miconia indiwasi* sp. nov. La primera se caracteriza por los nudos alados y pertenece a la sección *Cremanium*, mientras que la segunda se caracteriza por las hojas amplexicaules y en la clasificación tradicional pertenece a la sección *Miconia*. Se establecen dos claves taxonómicas para el reconocimiento de las especies de género *Miconia* con inflorescencias terminales de hojas amplexicaules y nudos alados. Las novedades en *Miconia* hasta el momento solo se conocen de las localidades tipo y se sugiere su categoría de amenaza como Vulnerable (VU).

Conclusiones: Los registros corológicos nuevos de *Blakea* y *Salpinga* representan una ampliación de distribución de taxones hasta ahora solo conocido para Perú y Ecuador. Las dos especies nuevas de *Miconia* descritas hasta el momento solo se conocen para el departamento Caquetá, lo cual ratifica los resultados de trabajos previos que muestran alta diversidad y endemismo de plantas para el piedemonte Amazónico en el sur de Colombia.

Palabras clave: *Blakea*, endemismos, hojas amplexicaules, nudos alados, *Salpinga*, taxonomía.

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Introduction

The Andean-Amazonian region of Colombia, in the departments Caquetá and Putumayo, is recognized as one of the centers of greatest biodiversity and number of endemic plants in the northern Andes (Myers et al., 2000; Olson and Dinerstein, 2002; Brooks et al., 2006; Swenson et al., 2012; Castaño et al., 2020). In particular, the family Melastomataceae has a remarkable diversity in this region, with more than 170 registered species, 10 of which are endemic to the departments Caquetá and Putumayo (Mendoza-Cifuentes and Cárdenas-López, 2015).

Recent research in the department Caquetá has revealed new taxonomic and chorological findings, confirming the high diversity and endemicity of the flora documented in previous work (Castaño et al., 2020). The aims of this paper are to describe two new species of the genus *Miconia* Ruiz & Pav. and to document a new record each for Colombia of the genera *Blakea* P. Browne and *Salpinga* Mart. ex DC. from the Indi Wasi National Natural Park and the Hacha River basin in the municipality of Florencia, department Caquetá.

Materials and Methods

Researchers from the University of Amazonia conducted two expeditions to the Indi Wasi National Natural Park and the Hacha River basin between 2021 and 2025, at elevations ranging from 600 to 2500 m. During this expedition, collections of fertile vascular plants were made and deposited in the herbaria HUAZ and JBB. Once the new specimens were identified, we proceeded to directly compare the collections of the present findings with the collections of the herbaria COL of the National University of Colombia and COAH of the SINCHI Institute, as well as the NY herbarium databases, to find possible specimens that could be cited as paratypes (acronyms following Thiers, 2026).

Vegetative parts and inflorescences were measured from dry herbarium material using a digital caliper (Mitutoyo 500 series, Neuss, Alemania) with an accuracy of 0.01 mm. Measurements of floral parts were made on fresh flowers preserved in 70% alcohol and taken from the same plant as the type specimen. Trichome types were identified according to the Atlas of Trichomes of Melastomataceae (Wurdack, 1986).

To assess the conservation status of the new species according to the criteria of the IUCN Red List (IUCN, 2022), we used the protocol implemented in the 'ConR' package (Dauby et al., 2017) for the R statistical language (R Core Team, 2025), considering the number of known occurrence points, the expected Area of Occupancy (AOO), and the Extent of Occurrence (EOO). Finally, keys to the groups containing the characters of the two taxonomic novelties for the genus *Miconia* are provided. For this purpose, databases and monographs covering the entire range of *Miconia* were consulted. These included Flora Mesoamericana (Almeda, 2009), Flora de Venezuela (Wurdack, 1973), Flora of Venezuelan Guayana (Berry et al., 2001), Flora of Ecuador (Wurdack, 1980), Flora of the Guianas (Wurdack and Renner, 1993), The Catalogue of the Vascular Plants of Bolivia (TROPICOS, 2015), Catalogue of the Vascular Plants of Ecuador (Renner, 1999), The Catalogue of the Flowering Plants and Gymnosperms of Peru (TROPICOS, 2003), Flora of Brazil (Goldenberg et al., 2020), and the Nomenclator Botanicus for the genus *Miconia* (Goldenberg et al., 2013).

Results

New records for Colombia

Blakea spruceana Cog. var. ***villosula*** Markgr., Notizbl. Bot. Gart. Berlin-Dahlem 9: 1146. 1927. Fig. 1.

TYPE: PERU. Mouth of Río Santiago, 160 m, 1924, fl, *G. Tessmann 4036* (holotype: BM (possibly destroyed, photo in F!); isotype: NY 00221438!, image on the web).

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Specimens examined: COLOMBIA. Caquetá, Belén de Los Andaquíes, quebrada Quisayá, finca Buenavista, a tres horas de camino desde la finca hacia el Parque Nacional Natural Indi Wasi, 800 m, 1°36'11.6''N, 75°58'22.9''W, 5.X.2021, fl, *H. Mendoza et al. 23036* (JBB). PERU. Condorcanqui, Cordillera del Cóndor, Alfonso Ugarte guard post (PV 3), headwaters of the Comainas river, 1200-1400 m, 03°54.5'S, 78°25.7'W, 25.VII.1994, fl, *H. Beltran and R. Foster 1218* (F 2178473, NY 04247720, images on the web); Huánuco, Pachieta, Codo de Pozuzo, 450 m, 9°40'S, 75°25'W, 21.X.1982, fl, *R. Foster 9364* (F 1961878, image on the web); Oxapampa, Distr. Pozuzo, Yanachaga-Chemillen National Park, 1010 m, 10°10'57.8''S, 75°34'25.6''W, 16.III.2017, fl, *F. Michelangeli et al. 2713* (NY 2676223, image on the web); loc. cit., 1245 m, 10°12'57.7''S, 75°35'4.4''W, 23.VII.2017, fl, *F. Michelangeli et al. 2915* (NY 4238583, image on the web).

Taxonomic notes: *Blakea spruceana* var. *villosula* can be recognized by the conspicuously trinervate bracteoles with pilose indumentum (subulate trichomes), style curved towards the apex, with pubescent apical part, and pale pink or white petals. The Colombian collections show incipient myrmecodomatia at the base of the leaf blade,

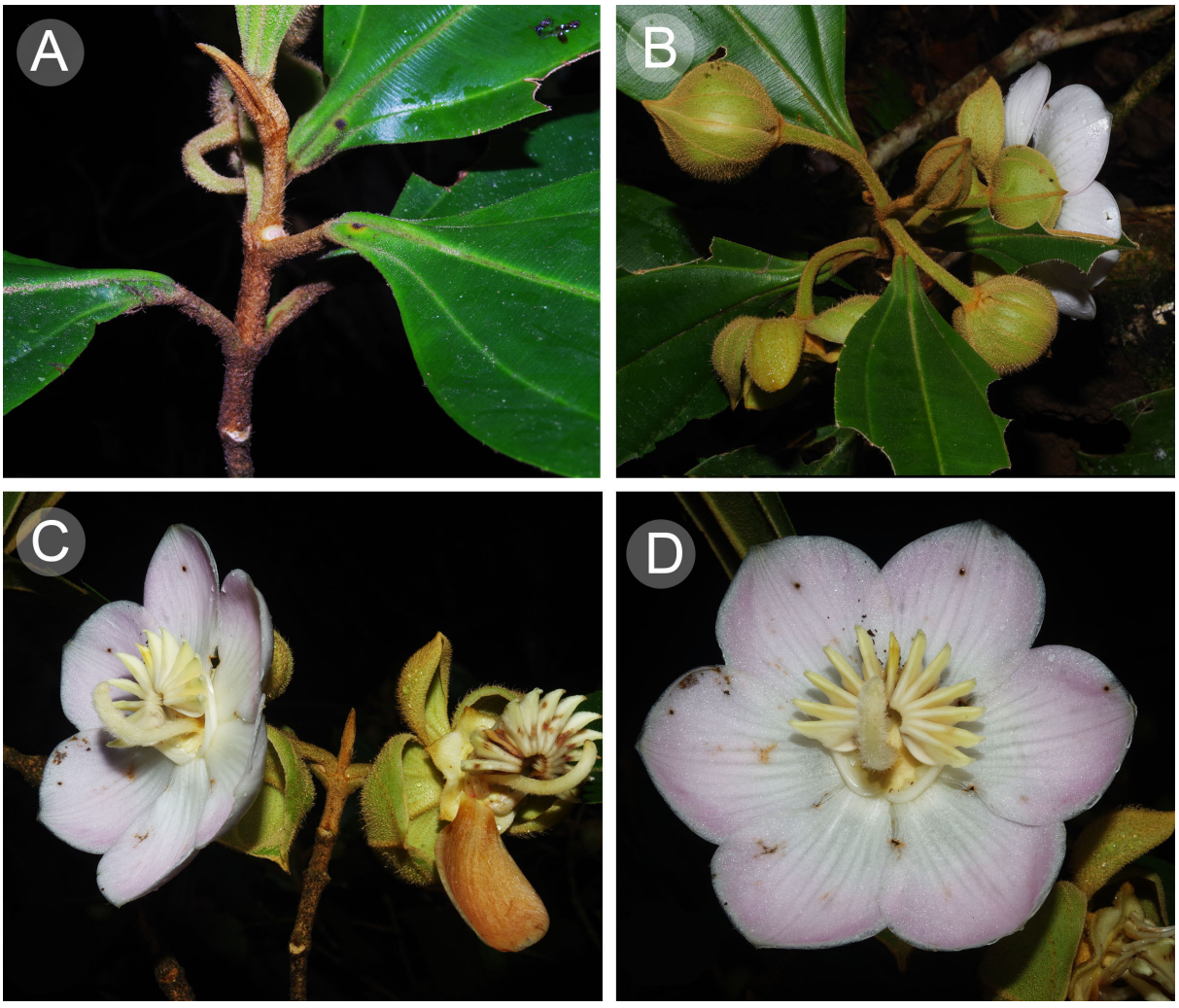


Figure 1: *Blakea spruceana* var. *villosula* Markgr. A. vegetative branch and leaves with myrmecodomatia; B. flowering branch; C, D. detail of the flowers. All photos by Alejandro Zuluaga, taken from fresh material of *Mendoza et al. 23036* (JBB).

a feature not present in the Peruvian populations. There are also slight differences in the coloration of the petals, which tend to be light pink in Colombia and completely white in Peru. With this chorological novelty, this variety is distributed from the central-eastern part of Peru (province of Oxapampa) to the south of Colombia, along the Amazonian foothills of the Andes, at elevations between 160 and 1200 m (Fig. 2).

Salpinga maranonensis Wurdack, Phytologia 9: 416. 1964. Fig. 3.

TYPE: PERU. Department Amazonas, Province Bagua, on ridge crest of Quebrada Chuivi (above k. 278 of Marañón road), valley of Río Marañón near Cascadas de Mayasi, 500-550 m, 10.IX.1962, fl, fr, *J. J. Wurdack 1917* (holotype: US 2404357!, image on the web; isotypes: F 0040198F!, K 000329531!, NY 00245740!, S 05-3314!, UC 1289628!, images on the web).

Specimens examined: COLOMBIA. Caquetá, municipio Florencia, cuenca del río Hacha, vereda El Caraño, finca La Portada, 1443 m, 1°49'51.3''N, 75°40'3.1''W, 5.III.2025, fr, *E. Trujillo et al. 8827* (HUAZ); El Doncello, vereda Las Américas, finca La Sierra, camino hacia El Lindero con Vicente Palacios, 1388 m, 1°44'31.6''N, 75°21'23''W, 1.IV.2023, fl, fr, *E. Trujillo et al. 8232* (JBB, LAMUA). Putumayo, municipio Mocoa, corregimiento de San Antonio,

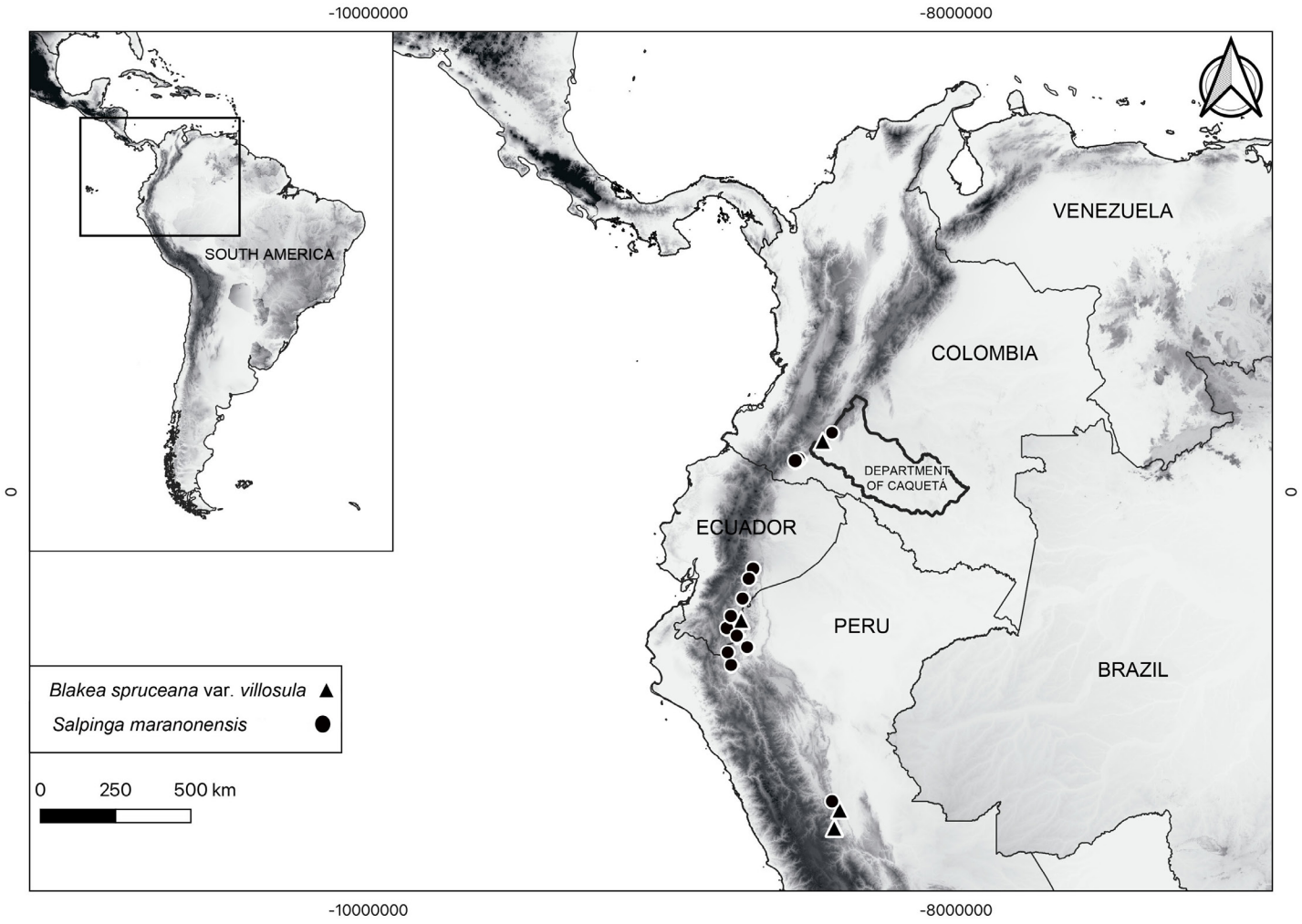


Figure 2: Distribution of *Blakea spruceana* var. *villosula* Markgr., and *Salpinga maranonensis* Wurdack in South America. Records obtained from GBIF Secretariat (2023).

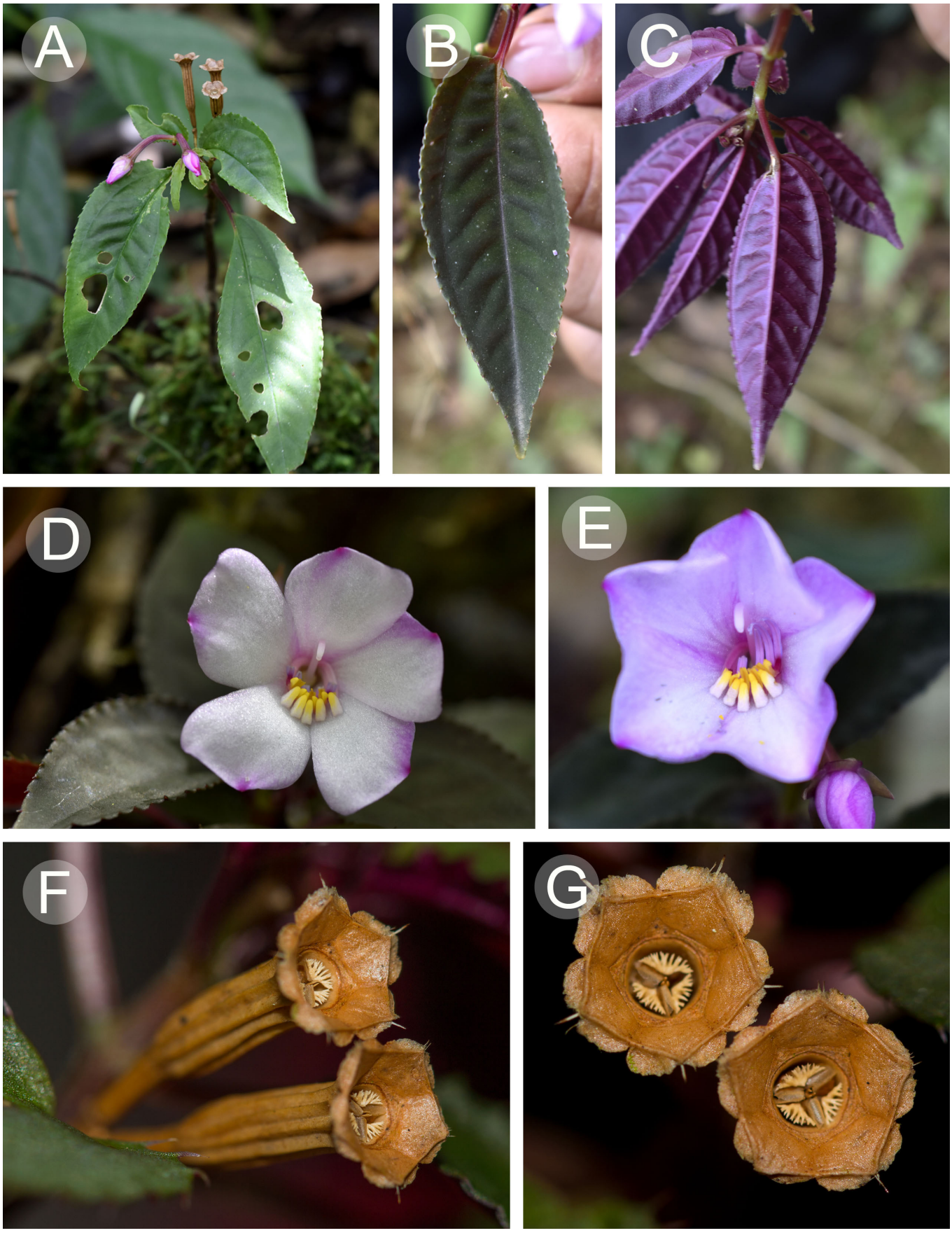


Figure 3: *Salpinga maranonensis* Wurdack. A. habit; B, C. leaves on both surfaces; D, E. flowers; F, G. fruits. All photos by Albeiro Rojas.

vereda Alto Campucana, 1350-1420 m, 1°12'N, 76°38'W, 20.IV.1994, fr, *J. L. Fernández A. et al. 11244* (COAH, COL); El Churumbelo, vereda El Zarzal, costado derecho de la quebrada Dantayaco, 840 m, 1°6'N, 76°36'W, fr, *B. R. Ramírez et al. 15645* (CAUP, COAH). ECUADOR. Morona-Santiago, Canton Limon Indaza, Cordillera del Condor, trail from camp #1 to camp #2 towards crest of Cordillera del Condor, 1200-1800 m, 3°14'S, 78°16'W, 13.XII.2002, fr, *J. L. Clark and L. Jost 6979* (MO, image on the web); Zamora-Chinchipe, Canton Nangaritza, Miazi, Rio Nangaritza, hillside behind camp., 930 m, 3°22'S, 78°20'W, 27.VII.1993, fl, fr, *A. Gentry 80506* (MO, image on the web); Rio Nangaritza, Shaimi, 1025 m, 4°19'S, 78°40'W, 6.XI.2004, fl, fr, *J. Homeier et al. 1486* (MO, image on the web); along road between El Pangui and Zamora, 10 km S of El Pangui, 670 m, 3°38'50''S, 78°33'59''W, 26.V.2003, fl, fr, *T. Croat and M. Menke 89427* (MO, imagen on the web). PERU. Amazonas, Quebrada Yutui Entsa, 1000 ft, 12.IV.1973, fl, *E. Ancuash 226* (MO, image on the web); Bagua Province, distr. Imaza, comunidad Arguaruna de Wana, km 92 carretera Bagua - Imacita, Cerro Chinin, 600-700 m, 25.VIII.1996, fl, fr, *C. Díaz et al. 7947* (MO, image on the web).

Taxonomic notes: *Salpinga* is a Neotropical genus with nine species distributed from Venezuela to Bolivia and Brazil, between 100 and 1700 m elevation, in the Guiana Shield, Amazon, and Andes regions (Wurdack and Renner, 1993; Michelangeli et al., 2022). With this discovery, *Salpinga maranonensis* expands its range along the Amazonian foothills of the Andes and the Amazonian plain in Peru (Amazonas), Ecuador (Zamora-Chinchipe and Morona-Santiago), and Colombia (Caquetá and Putumayo) between 280 and 1800 m in elevation (Fig. 2). It is a terrestrial herbaceous or, less commonly, epiphytic species, up to 50 cm tall, characterized by its leaves with toothed-ciliolate margins, inflorescence with more than 10 flowers and calyx with subulate lobes. It is morphologically similar to *Salpinga secunda* Schrank & Mart. ex DC., but the latter has glabrous leaves on the upper side and entire to serrate margins (without large teeth), broadly triangular calyx lobes and regularly white petals.

Taxonomic novelties

Miconia alatinodis Humberto Mend., Posada-Herrera & Edwin Trujillo, **sp. nov.** Figs. 4, 5.

TYPE: COLOMBIA. Caquetá, municipio Florencia, vía que conduce de Florencia a Huila, puente antes de El Pórtico, 2200 m, 1°45'45.07''N, 75°45'34.41''W, 10.X.2021, fl, *H. Mendoza and E. Trujillo 23058* (holotype: JBB!; isotypes: COAH!, COL!).

Miconia alatinodis belongs to Sect. *Cremanium* (D.Don) Hook.f., is characterized by strongly winged nodes (broad-winged and laminar), subsessile leaves, blade elliptic-oblong to oblong-ovate with auriculate and slightly amplexicaul base, flowers 5-merous, anthers with a 4-pored apical cleft, and 3-locular ovary. It is similar to *Miconia manicata* Cogn. & Gleason and *M. auritinoda* Wurdack, but these have elliptic petiolate leaves with obtuse to decurrent leaf base.

Shrubs, 1-3 m tall; totally glabrous; internodes 1.4-3.8 cm long, flattened oblong in the basal parts, quadrangular with rounded edges in the distal parts, reddish brown to light green in fresh material; strongly winged nodes (annular), lamellar wing 1.7-4 mm wide, margin slightly revolute, light green in fresh material; leaves isophyllous, subsessile, symmetrically decussate, horizontally extended, green on the abaxial surface while reddish on the adaxial surface in fresh material, subsessile, petiole 1.8-2.7 mm long, flattened, blade 5.8-11.6 × 2-4.5 cm, elliptic-oblong to oblong-ovate, margin finely serrate, slightly revolute in dry material, apex acuminate, base subcordate and semi-amplexicaul, auricles 1.8-4 mm long; venation immersed on the abaxial side, protruding on the adaxial side, with a pair of secondary basal veins accompanying the midvein, 28-33 pairs of tertiary veins adjacent to the midvein; inflorescence 6.4-8.5 cm long, terminal, paniculate, erect, with 80-150 flowers, peduncle 0.7-1 cm long, central axis quadrangular, with 5-8 branching nodes, basal paracladia 0.6-1.5 cm long, with 1-2 branching levels, apex of twigs ending in 3 flowers; without bracts, bracteoles 1.5-1.7 ×

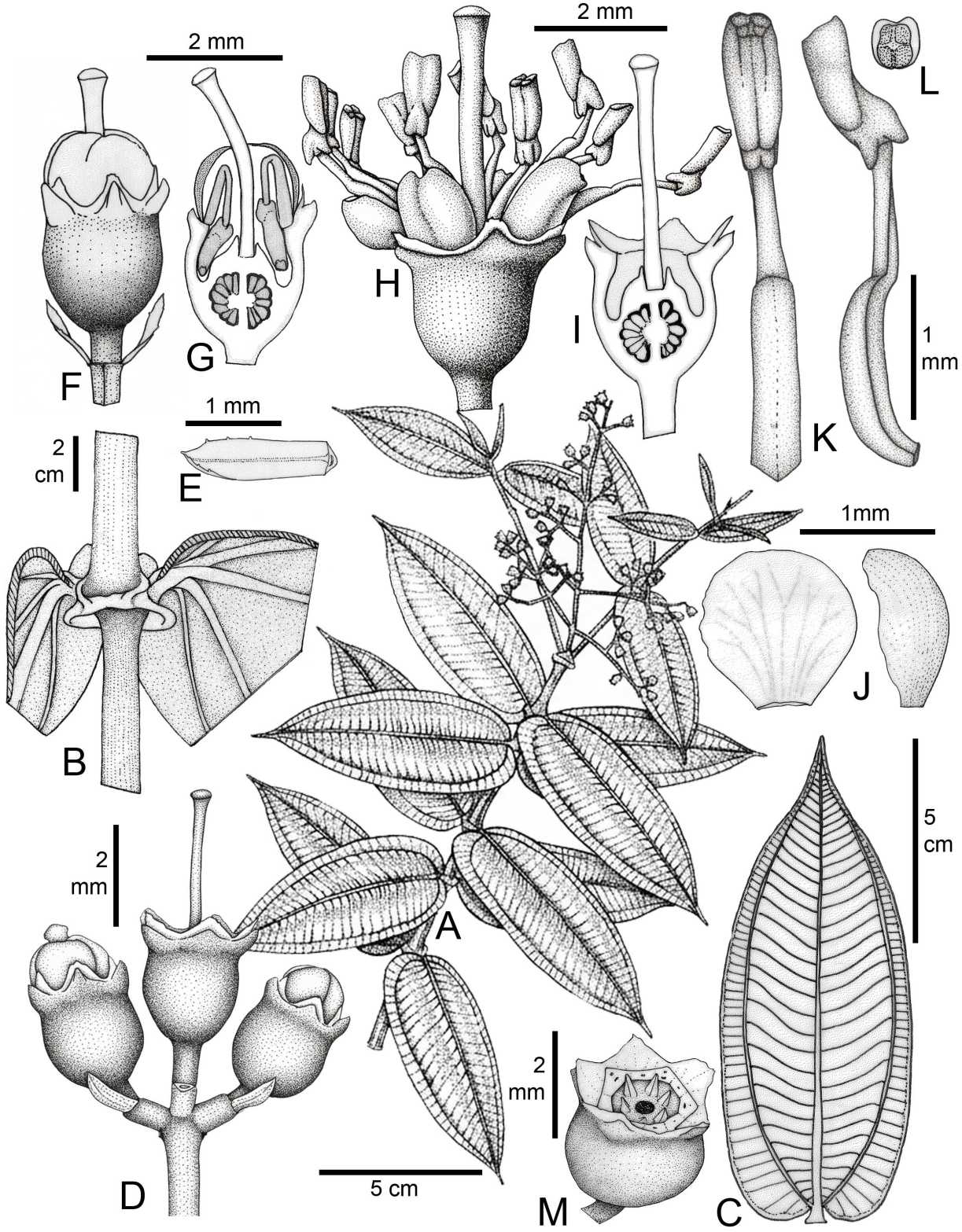


Figure 4: *Miconia alatinodis* Humberto Mend., Posada-Herrera & Edwin Trujillo. A. flowering branch; B. detail of the winged node; C. leaves; D. detail of the apex of an inflorescence branch; E. bracteole; F. floral bud; G. longitudinal section of the floral bud; H. flower in lateral view; I. longitudinal section of the hypanthium and pistil; J. petals; K. stamen in different views; L. close-up of the apical anther opening; M. Fruit. Illustration by Humberto Mendoza and Omar David Bernal, based on *H. Mendoza and E. Trujillo 23058* (JBB).



Figure 5: *Miconia alatinodis* Humberto Mend., Posada-Herrera & Edwin Trujillo. A, B. flowering branch; C. detail of the winged node; D. flowers at different development stages. All photos by Humberto Mendoza from the fresh type material.

0.4-0.5 mm, linear-obovate, early caducous; flowers 5-merous, diplostemonous, pedicellate; pedicel 0.6-0.9 mm long; hypanthium 2-2.2 × 1.9-2 mm, campanulate, free thalamus of ovary 1-1.1 mm long; calyx lobed, tube ca. 0.35 mm long, lobes ca. 0.5 × 0.8 mm, triangular, membranaceous, dorsal teeth developed, ca. 0.5 × 0.4 mm, thicker but shorter than the lobe; corolla rotaceous, petals 1.5-1.7 × 1.2-1.5 mm, suborbicular, concave, suberect, glabrous, white, externally minute papillose; stamens isomorphic, symmetrically arranged in anthesis, white, glabrous, filament 2.1-2.3 mm long and 0.3-0.34 mm wide at the base, geniculate in the middle, anther 0.7-0.9 × 0.4 × 0.4 mm, obovate, opening by an apical 4-porate gap, 0.22-0.25 mm diameter, basal connective 0.4-0.5 × 0.3-0.4 mm, with two small ventral

lobes and two dorsal lobes; ovary 1.7-1.8 mm long, 3-locular, ovoid, fused at the base to the hypanthium ca. 1 mm, free apex of the hypanthium 0.8-0.9 mm long, conical, glabrous, with 5-6 teeth 0.25-0.41 mm long; style 3.9-4.2 mm long and ca. 0.4 mm in diameter at the center, cylindrical, white, glabrous; stigma 0.5-0.6 mm in diameter, slightly expanded; fruits and seeds not seen.

Etymology: the specific epithet is an allusion to the strongly winged nodes (annular nodes), a rare feature among species of *Miconia*.

Distribution and habitat: *Miconia alatinodis* is so far only known from the type locality in the department of Caquetá, on the eastern flank that drains into Amazonia from the Cordillera Oriental, in Andean forest areas at around 2200 m elevation (Fig. 6). It grows in very wet and shady ravine edges. Although only a few individuals were observed in the collection area, it is plausible that it may be more abundant at elevations above 2200 m.

Phenology: collected with flowers in October.

Conservation Status: *Miconia alatinodis* is a species that depends on very wet and shady ravine edges within mountain forests. Its sole known population is located within a Regional Park and has an area of occupancy (AOO) of 4 km^2. Considering that the only known population is within a protected and well-maintained area, it is recommended to classify it as Vulnerable (VU B2a).

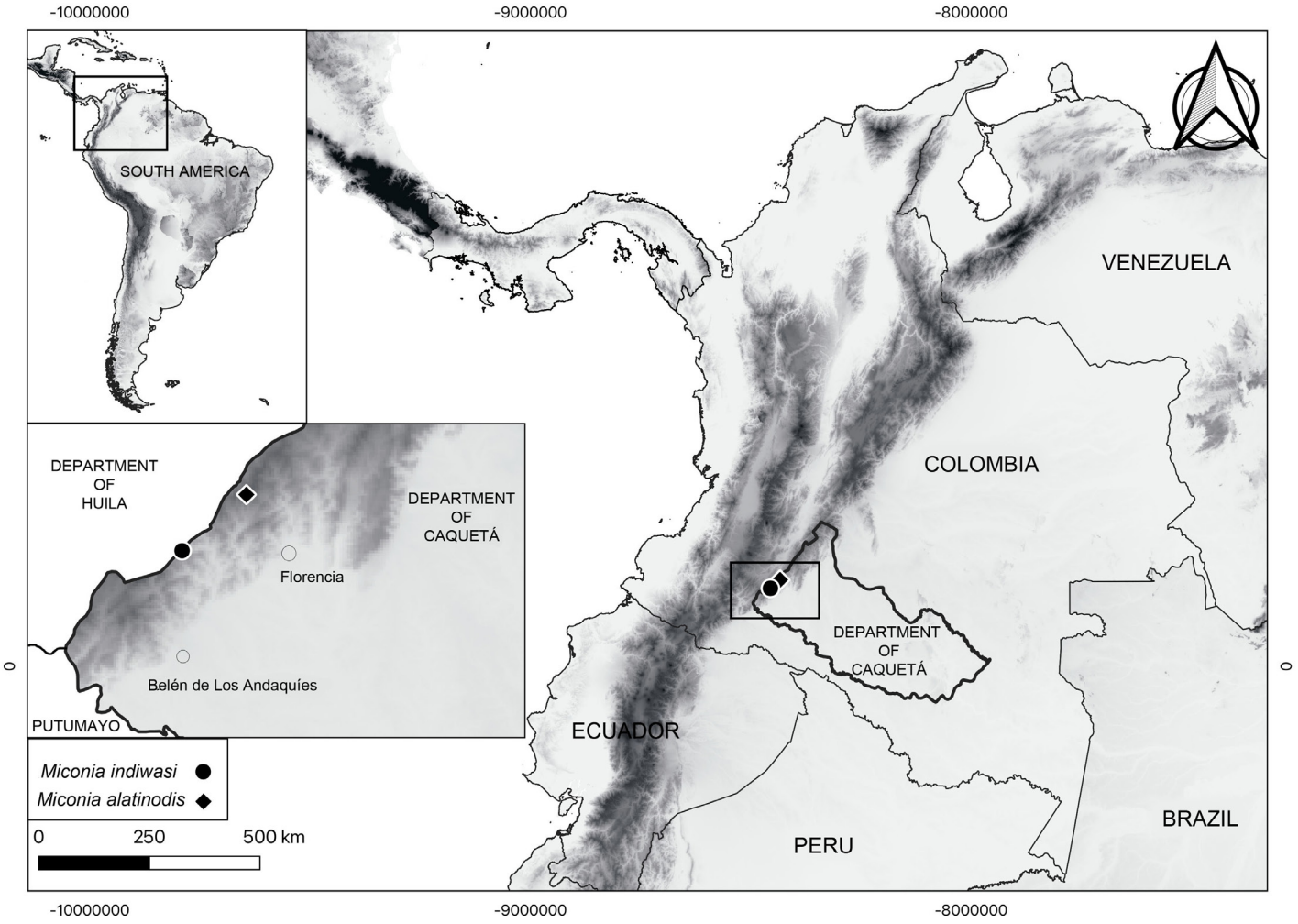


Figure 6: Distribution of *Miconia alatinodis* Humberto Mend., Posada-Herrera & Edwin Trujillo, and *Miconia indiwasi* Humberto Mend., Posada-Herrera & Edwin Trujillo.

Taxonomic notes: *Miconia alatinodis* can be recognized by its broadly winged nodes, subsessile leaves with auriculate and semi-amplexicaule base, flowers 5-merous, anthers with a large 4-pored opening, and 3-locular ovary. Due to the shape of the stamens, it can be assigned to section *Cremanium*, to which *Miconia theaezans* (Bonpl.) Cogn. also belongs. About seven species with winged nodes or a prominent interpetiolar line are found in section *Cremanium*: *M. amplinodis* Umaña & Almeda, *M. auritinoda*, *M. cremophylla* Naudin, *M. elvirae* Wurdack, *M. manicata*, *M. polyneura* Triana and *M. wurdackii* L.Uribe. All have stamens like those of *M. theaezans*, which is the most representative species of the section *Cremanium* due to its abundance and wide distribution in the Neotropics, opening into a septate apical gap with 2-4 pores, and the base of the connective has small bilobed extensions ventrally and dorsally.

Among species with winged nodes, *Miconia alatinodis* shows a strong affinity to *M. manicata*, which shares the winged nodes but has petiolate, elliptic, decurrent-based leaves (*vs.* subsessile, elliptic, auriculate-based leaves in *M. alatinodis*). Two other species with winged nodes, 5-merous flowers, 3-locular ovary, and a slightly or fully expanded stigma are also found in this group: *M. auritinoda* and *M. elvirae*. These three winged-node species are most closely related to *M. alatinodis* but have notable differences in that they all have conspicuous petiolate leaves, and the base of the leaf is decurrent to obtuse. Other species with some similarity and winged nodes but from different sections are *M. annulata* (Naudin) Triana and *M. stipularis* Naudin, both with uniporate anthers, basal connectives without appendages, and punctate stigmas. In addition, the leaves of the latter two species are conspicuously petiolate.

The winged or annular node character refers to an extended nodal line, forming a conspicuous outgrowth or flanges or even stipuliform flags (Judd et al., 2022). In *Miconia*, there are different modalities and degrees of interpetiolar nodal line and laminar structure that completely or partially surround the node (Fig. 7). In some cases, there are protuberances at the dorsal base of the petiole, but they do not surround totally the node, so they can be considered as partially winged nodes, as can be observed in *M. amplinodis*, *M. annulata, M. auritinoda*, *M. grayana* Cogn., and *M. haughtii* (Gleason) Wurdack. In a very rare case in *M. aponeura* Triana and *M. robinsoniana* Cogn., a strongly winged petiole is present, which partially envelops the node and can be considered as a partially winged node. A similar case occurs in *M. tiliifolia* Naudin and *M. clypeata* Wurdack, where the base of the petiole widens and forms a robust and continuous protuberance, which also represents a partially winged node.

In other species there is a thick or prominent interpetiolar line, so it is not considered a winged node; this is the case of *Miconia cundinamarcensis* Wurdack, *M. cremophylla* and *M. wurdackii,* among others. There is a type of node with large squamose trichomes as in *M. laciniata* Wurdack and *M. plumifera* Triana, but in our opinion it cannot be considered a winged node or interpetiolar line. Considering the above, within the genus *Miconia* with strictly terminal inflorescences, and based on extensive review of databases and monographs of the genus throughout its entire range, there are about 17 species with winged nodes or partial winged nodes. This group is almost confined to the Andes, but there are a few lowland species in Peru, Bolivia and Brazil, and this is a character found in different groups of the genus. The following key can be used to identify *Miconia* species with terminal inflorescences with completely or partially winged nodes.

Key to *Miconia* species with terminal inflorescence and with completely or partially winged nodes

1a. Internodes, lower leaf-surface clear brown, the actual surface completely concealed by the dense lepidote stellate trichomes, covering the surface uniformly (Brazil, Bolivia) ..... ***M. tiliifolia*** Naudin

1b. Internodes and lower leaf-surface green, the actual surface plainly visible, glabrous or with sparse indument 2

2a. Petiole <3 mm long; leaves ovate with slightly amplexicaul base (Andes: Caquetá department, Colombia) ..... ***M. alatinodis*** Humberto Mend., Posada-Herrera & Edwin Trujillo



Figure 7: Field images of different species with completely or partially winged nodes. A. *Miconia clypeata* Wurdack; B. *Miconia alatinodis* Humberto Mend., Posada-Herrera & Edwin Trujillo; C. *Miconia amplinodis* Umaña D. & Almeda (iNaturalist, 2012); D. *Miconia aponeura* Triana (iNaturalist, 2023b); E. *Miconia condylata* Wurdack (iNaturalist, 2023c); F. *Miconia punctibullata* M.E. Morales, Michelang. & F. González; G. *Miconia auritinoda* Wurdack; H. *Miconia annulata* (Naudin) Triana (iNaturalist, 2023d); I. *Miconia stipularis* Naudin (iNaturalist, 2021b). Photos: A, F. Humberto Mendoza; B. Sebastián Moreno; C. Eduardo Chacón-Madrigal observation 54571601 CCBY; D. Diego Amaya observation 187379250 CC BY-NC; E. Raffaella Mingi Mozo observation 192679536©, utilizada con permiso de la autora de la foto; G. Corine Vriesendorp; H. Nicolás Baresch Uribe observation 192977531 CC BY; I. Nicolás Baresch Uribe observation 70780252CC BY.

2b. Petiole >5 mm long; leaves elliptic to oblong, if ovate then petiole widened at the base, base not amplexicaul 3

3a. Internodes quadrangular-aristate (acute-edged or laminar) 4

3b. Internodes terete, if quadrangular, the edges rounded (not acute or laminar) 9

4a. Leaves ovate-cordate, with cordate base 5

4b. Leaves elliptic to oblong, with rounded to obtuse base 6

5a. Petiole apex with a shield-like thickening; leaf margin toothed; anthers oblong with tow apical pores; stigma discoid (Andes: Western Cordillera of Colombia) ..... ***M. clypeata*** Wurdack

5b. Petiole apex without thickening; leaf margin ciliate; anthers subulate, ventrally arched, with an apical pore; stigma punctiform (Andes: Bolivia) ..... ***M. obliqua*** Gleason

6a. Plants with lax to semi-dense indumentum; elongated setose or curly-walled trichomes on stems, petioles, leaf blades and inflorescence 7

6b. Plants completely glabrous; inflorescences with secundiflorous branches 8

7a. Internodes, petiole, and leaves with setulose filamentose trichomes (Sierra Nevada de Santa Marta, Colombia) ..... ***M. insueta*** Wurdack

7b. Internodes, inflorescence, and leaves on the underside with elongated curly-walled trichomes (Eastern Cordillera of Colombia) ..... ***M. stipularis*** Naudin

8a. Calyx lobulate (Galapagos Islands, Ecuador) ..... ***M. robinsoniana*** Cogn.

8b. Calyx truncate (lowland rainforest: Colombia, Ecuador, Costa Rica) ..... ***M. aponeura*** Triana

9a. Petiole apex with a shield-like thickening (toothed leaf margin; oblong anthers with 2 apical pores; capitate stigma) (Andes: Western Cordillera of Colombia) ..... ***M. clypeata*** Wurdack

9b. Petiole apex without thickenings 10

10a. Leaves ovate-cordate, cordate at base; petioles 50-80 mm long (Eastern Andes: Bolivia) ..... ***M. obliqua*** Gleason

10b. Leaves elliptic, oblong or obovate; petioles <35 mm long 11

11a. Semi-prostrate herbs; obovate leaves with dark spots on the underside; yellow petals (Andes: Colombia) ..... ***M. punctibullata*** M.E.Morales, Michelang. & F. González

11b. Trees, shrubs, or suffrutices, erect; leaves elliptic to oblong, without dark spots on underside; petals white, cream or pink 12

12a. Plants completely glabrous 13

12b. Plants with some type of indumentum on internodes, leaves or inflorescence 19

13a. Flowers 6-merous; dorsal calyx teeth linear and conspicuously surpassing the lobes; petals pink; anthers yellow; hypanthium-calyx urceolate (Andes: Ecuador) ..... ***M. grayana*** Cogn.

13b. Flowers 5-merous; dorsal calyx teeth not linear and not conspicuously surpassing the lobes; petals withe; anthers withe or pink; hypanthium-calyx campanulate or cupuliform 14

14a. Lianescent plants; hypanthium broadly campanulate; stamens partially united forming a circle around the style (symphyandric); thalamus of hypanthium internally septate (Western Andes: Colombia) ..... ***M. haughtii*** (Gleason) Wurdack

14b. Tree or shrubby; hypanthium cupuliform; stamens free; hypanthium thalamus internally smooth 15

15a. Anthers oblong to linear-oblong, opening into a small apical or ventrally oriented pore (Andes: Colombia and Ecuador) ..... ***M. annulata*** (Naudin) Triana (includes *M. scutate* Gleason)

15b. Anthers obovate or less frequently oblong, opening into an apical gap with 2-4 large openings 16

16a. Leaves slightly plinerved, margin crenulate-ciliolate; nodes conspicuously winged, wing 3-5 mm wide and completely surrounding the node (Eastern Andes: Colombia and Venezuela) ..... ***M. elvirae*** Wurdack

16b. Leaves with basal veins, margin serrate or serrate-ciliolate; interpetiolar line conspicuous but not laminate (base of the petiole broadened sideways, they may or not completely encircle the node) 17

17a. Leaves narrowly elliptic; ratio of distances A (between the midvein and the first secondary vein) and B (the distance between the first secondary vein and the margin) in the middle part of the blade near 2.5;

flowers conspicuously pedicellate (Andes: Colombia, Ecuador) ..... ***M. manicata*** Cogn. & Gleason

17b. Leaves broadly elliptic; ratio A/B between 1.4 and 1.8; flowers sessile or subsessile..... 18

18a. Shrubs or suffrutices; petiole 5-8 mm long; inflorescence erect; stigma punctiform (Costa Rica) ..... ***M. amplinodis*** Umaña & Almeda

18b. Lianescent plants; petiole 10-20 mm long; inflorescence sub-pendulous; stigma capitate (Andes: Ecuador) ..... ***M. auritinoda*** Wurdack

19a. Shrubs or suffrutex, flowers 4-merous; internodes terete; inflorescence with semi-dense indumentum of bulbose-stellate trichomes (Andes: Peru) ..... ***M. condylata*** Wurdack

19b. Lianescent plants; flowers 5-merous; internodes quadrangular with rounded edges; inflorescence glabrescent or with sparse indumentum of tiny pinoid or elongated dendritic trichomes (Western Andes: Colombia) ..... ***M. haughtii*** (Gleason) Wurdack

Miconia indiwasi Humberto Mend., Posada-Herrera & Edwin Trujillo, **sp. nov.** Figs. 8, 9.

TYPE: COLOMBIA. Caquetá, municipio Belén de Los Andaquíes, quebrada Quisayá, finca Buenavista, a tres horas de camino de la finca hacia el Parque Nacional Natural Indi Wasi, 800 m, 1°36'11.6''N, 75°58'22.9''W, 5.X.2021, fl, *H. Mendoza et al. 23035* (holotype: JBB!; isotypes: COAH!, COL!).

Miconia indiwasi is characterized by the reddish-brown and dense indumentum of stellate trichomes on the internodes and inflorescence, leaves amplexicaul, leaf base decurrent and revolute, flowers 5-merous, stamens isomorphic, anthers pink and ventrally arched, and ovary 5-6-locular. It is similar to *Miconia impetiolaris* (Sw.) DC. but differs in the leaf base (*vs.* truncate-rounded), basal paracladia with 3 branching levels (*vs.* 1 branching level), flowers laxly arranged (*vs.* glomerular points), isomorphic stamens (*vs.* dimorphic), and anthers pink (*vs.* white). It also resembles *M. grandifoliata* R. Goldenberg & Michelangeli, but the latter has an obtuse leaf base, white anthers, and basal connective and ovary apex with glandular trichomes (*vs.* glabrous in *M. indiwasi*).

Small trees, 5-6 m tall; internodes, midrib, and inflorescence with dense reddish-brown indumentum, adpressed stellate trichomes 0.15-0.3 mm diameter (type 38 of Wurdack, 1986); internodes 3.5-5.5 cm long, oblong-flattened, lightly sulcate; leaves isophyllous or slightly unequal in size at the same node, sessile or with a short petiole up to 4 mm long, amplexicaul, blade 14.5-32.5 × 4-12 cm, elliptic to obovate-elliptic, margin entire and slightly revolute, apex acuminate, base decurrent and amplexicaul, revolute, with small lobes 4-14 mm long, adaxial side glabrous, abaxial side with lax indumentum of trichomes like internodes; venation with 1 pair of secondary veins accompanying the midvein, plinerved 15-30 mm from the apex of the petiole, midrib raised on both surfaces, secondary veins protruding only on the underside, 34-58 pairs of tertiary veins adjacent to the midvein, as clear lines on the abaxial side; inflorescence 17-32 cm long, terminal, paniculate, erect, with 300-500 flowers laxly arranged, peduncle 3.5-17 cm long, central axis with 6-11 branching nodes, basal paracladia 9.5-16 cm long, with 3 branching levels, apex of twigs ending in 3 flowers, without bracts, bracteoles 1.5-2 mm long, linear, early caducous; flowers 7-8 mm long, 5-merous, diplostemonous, sessile or with a short pedicel 0.3-1.6 mm long; hypanthium 2.1-2.3 mm long, 1.6-1.7 mm in diameter, cylindric, externally with dense indumentum of stellate bulbose trichomes, 0.8-0.9 mm in diameter (type 31), slightly ribbed, free thalamus of ovary ca. 1.2 mm long, internally ribbed; calyx lobed, lobes 0.3-0.8 × 1.2-1.3 mm, triangular, without dorsal teeth; corolla with reflexed petals at anthesis, petals 3-3.6 × 1.6-1.8 mm, oblongs, white, externally with a dense indumentum of minute papillae, margin finely papillose; stamens isomorphic, irregularly arranged on one side of the flower in anthesis, filament 2.7-3 mm long, 0.15-0.2 mm wide, white, glabrous, anther 2.6-2.9 mm long, linear-oblong, strongly ventrally arched, pink, with a dorsally inclined pore, ca. 0.15 mm diameter, basal connective auriculate, lateral auricles 0.24-0.36 mm long, glabrous; ovary 1.5-1.6 mm long, 5-locular, rarely 6-locular,

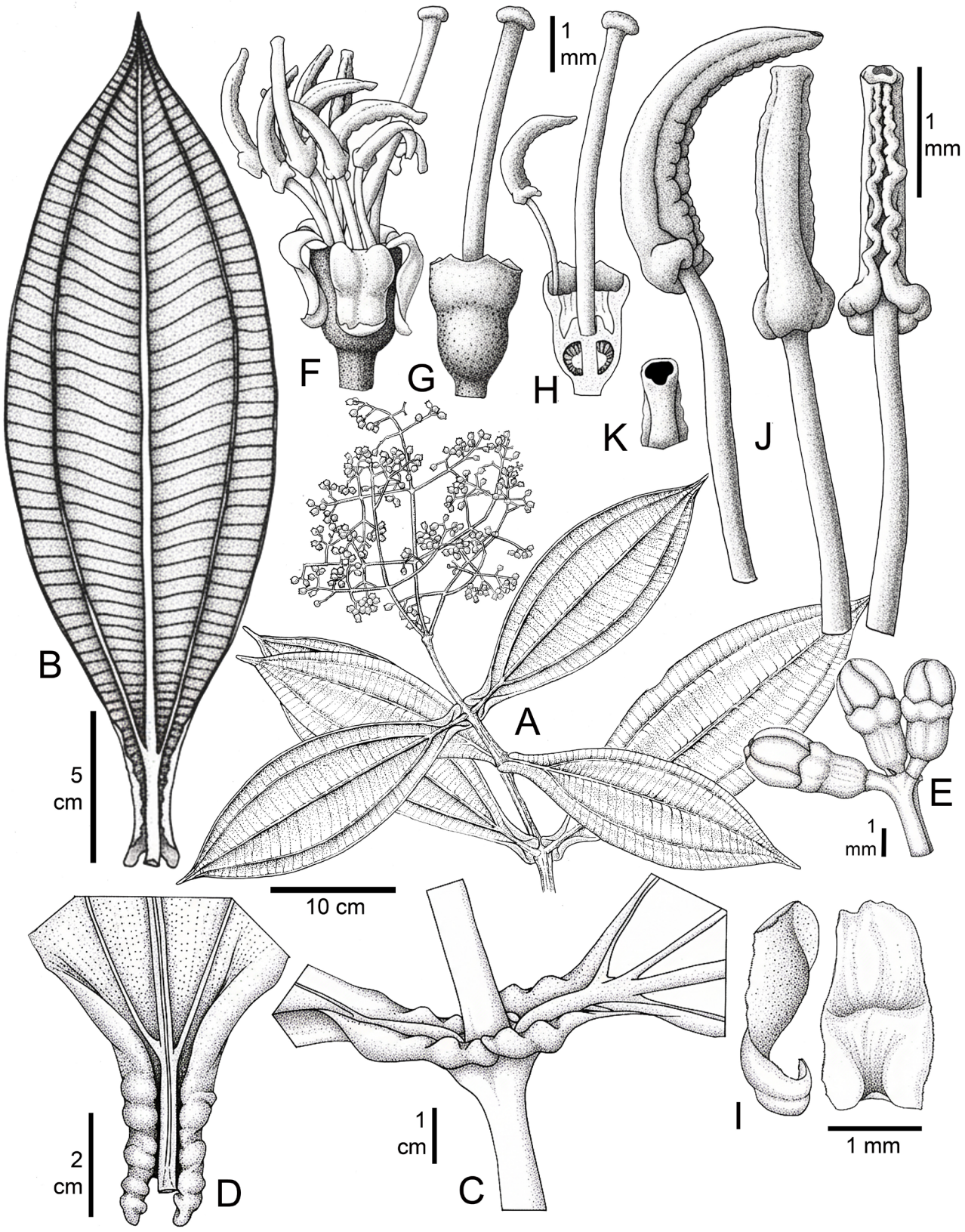


Figure 8: *Miconia indiwasi* Humberto Mend., Posada-Herrera & Edwin Trujillo. A. flowering branch; B. leaves; C. detail of the base of amplexicaul leaves; D. detail of leaf base; E. floral buttons; F. flower in lateral view; G. lateral view of the hypanthium-calyx; H. longitudinal section of the hypanthium and pistil; I. petals; J. stamen in different views; K. close-up of the anther pore. Illustration by Humberto Mendoza and Omar David Bernal, based on *H. Mendoza et al. 23035* (JBB).

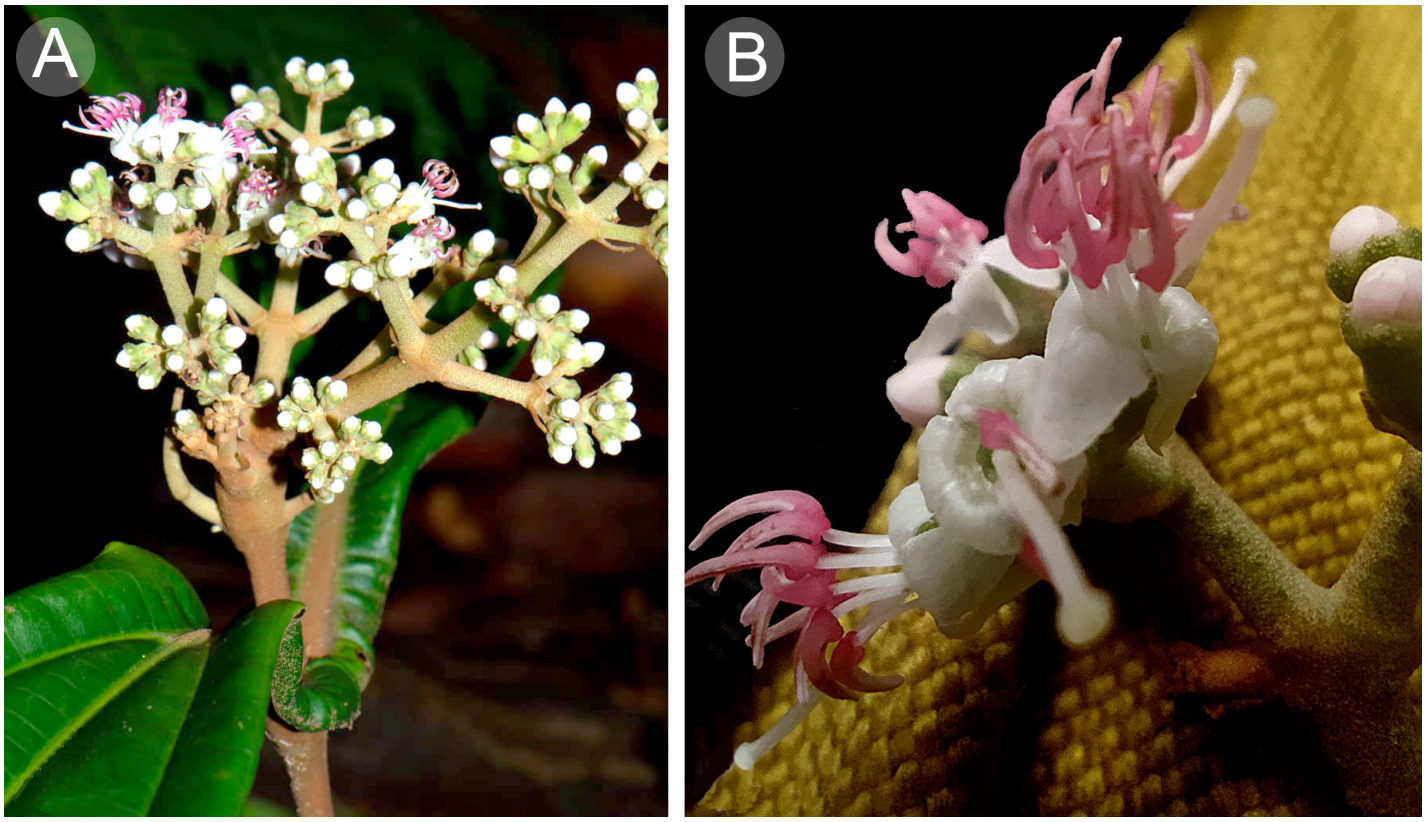


Figure 9: *Miconia indiwasi* Humberto Mend., Posada-Herrera & Edwin Trujillo. A. flowering branch; B. open flowers. All photos by Humberto Mendoza, from the type.

ovoid, free apex of the hypanthium 0.5 mm long, conical, glabrous; style 7.8-8 mm long, 0.43-0.47 mm in diameter at the center, cylindrical, white, glabrous; stigma 0.75-0.77 mm in diameter, discoid; fruits and seeds not seen.

Etymology: the epithet refers to its presence and collection in the Indi Wasi National Natural Park.

Distribution and habitat: *Miconia indiwasi* is known only from the type locality in the department Caquetá, on the eastern flank that drains into Amazonia from the Cordillera Oriental (Fig. 6). The area corresponds to the Indi Wasi National Natural Park, and the type was collected at 800 m elevation in a well-preserved Sub-Andean forest. Only a few individuals were observed in the collection area, but it is possibly more abundant at elevations above 800 m.

Phenology: collected with flowers in October.

Conservation status: *Miconia indiwasi* is an umbraphile species dependent on well-preserved forest areas within a protected area. It has a restricted distribution, with an area of occupancy (AOO) of 4 km^2, and is known so far from a single locality. Given that its occupancy area is within a well-conserved protected area, it is suggested to classify it as Vulnerable (VU B2a).

Taxonomic notes: *Miconia indiwasi* is characterized by the reddish-brown and dense indumentum of stellate trichomes on the internodes and inflorescence, the amplexicaul leaves with decurrent and revolute base, the large and highly branched inflorescences, the isomorphous stamens, ventrally arched and pink anthers, and 5-6-locular ovary. It would be included in section *Miconia* based on its linear-subulate anthers with an apical pore, and is morphologically similar to *Miconia impetiolaris* and *M. grandifoliata*, both with stellate trichome indumentum on internodes and inflorescences, amplexicaul leaves, and

5-merous flowers. However, the latter two species present notable differences in the shape of the leaf base, being much narrower in *M. indiwasi*. *Miconia grandifoliata* also has much longer and broader leaves, and *M. impetiolaris* has a serrate margin; both have a 3-locular ovary. Another notable character that differentiates *M. indiwasi* from the abovementioned species is the isomorphic stamens with ventrally arched pink anthers.

The amplexicaul leaves are a rare feature in the genus *Miconia*, and there is a whole gradation of development of the auricles surrounding the stem. There are species with conspicuously amplexicaul leaves and others where the leaves have very short petioles and a cordate base that slightly surrounds or barely touches the stem (slightly amplexicaul) (Fig. 10).

Considering only taxa with terminal inflorescences, there are about 35 species of *Miconia* with conspicuous to slightly amplexicaul leaves distributed throughout the Neotropics. This character has evolved in different groups of the genus. The following key is useful for the identification of *Miconia* species with terminal inflorescence and amplexicaul or slightly amplexicaul leaves. It partially adopts the key established by Gleason (1932) for species of the sections *Tamonea* Cogniaux and *Adenodesma* Naudin with large and sessile leaves and stamens with glandular trichomes.

Key to Miconia species with terminal inflorescence and amplexicaul or semi-amplexicaul leaves

1a. Species from the Antilles 2
1b. Species from Central and South America 5
2a. Internodes and leaves on the underside with ferruginous indumentum; leaves >20 cm long 3
2b. Internodes and leaves glabrous or leaves glaucous on the underside; leaves <10cm long 4
3a. Leaves nerved or slight plinerved, with cordulate base (Cuba, Jamaica, Haiti, Dominican Republic, Puerto Rico, Guadeloupe, Dominica) ..... ***M. impetiolaris*** (Sw.) D.Don ex DC.
3b. Leaves strongly plinerved, attenuate base (Cuba) ..... ***M. tomentosa*** (Rich.) D.Don ex DC.
4a. Leaves with bullate upperside and glaucous underside (Haiti, Dominican Republic, Puerto Rico) ..... ***M. crotonifolia*** (Desr.) Judd & Ionta
4b. Leaves smooth, underside glabrous, not glaucous (Cuba) ..... ***M. androsaemifolia*** Griseb.
5a. Plants glabrous or glabrescent (with few lepidote or adpressed stellate trichomes) 6
5b. Plants pubescent (subulate, pinoid or stellate trichomes) or with ferruginous indumentum 17
6a. Leaves verticillate (3 per node, short petiolate and slightly amplexicaul) (Bolivia, northern and central-western Brazil) ..... ***M. vilhenensis*** Wurdack
6b. Leaves opposite 7
7a. Lianescent plants; pendulous inflorescence (western slopes of the Cordillera Occidental of Colombia) ..... ***M. rubricans*** Triana
7b. Trees, shrubs or erect herbs 8
8a. Inflorescence with secundiflorous branches; leaf blade obovate or elliptic-obovate, strongly narrowing towards the base, irregularly undulate base (Central America, Colombia, Venezuela, Ecuador and Peru) ..... ***M. appendiculata*** Triana
8b. Inflorescence not with secundiflorous branches; paniculate or corymbiform; leaf blade ovate, lanceolate or oblong, not narrowing towards base 9
9a. Nodes winged or with a dentiform interpetiolar protuberance 10
9b. Nodes smooth, without wings or dentiform interpetiolar line 11
10a. Nodes strongly winged; leaf blade elliptic to ovate-elliptic, reddish underside; flowers bisexual; anthers opening in a gap with 4 pores (Andes: Colombia) ..... ***M. alatinodis*** Humberto Mend., Posada-Herrera & Edwin Trujillo
10b. Nodes with dentiform interpetiolar line; leaf blade lanceolate, light green on both surfaces; functionally unisexual flowers (some with long style and short stamens and others with long stamens and short style); anthers with an apical-ventral pore (Andes: Peru) ..... ***M. burkeae*** J.C.Angulo & Michelang.
11a. Leaves lanceolate; internodes and undersides of leaves with a lax indumentum of irregular adpressed

stellate trichomes (shrubs with sessile, 4-merous flowers and lilac petals) (Peruvian Andes) ..... ***M. ferreyrae*** Wurdack

11b. Leaves ovate, if lanceolate then completely glabrous, without appressed trichomes 12

12a. Flowers 4-merous 13

12b. Flowers 5-merous 14

13a. Shrubs; internodes quadrangular with rounded edges; leaves green on the underside, with a single pair of secondary veins reaching the apex; without bracts or bracteoles; pedicellate flowers; lobed calyx (Andes: Peru) ..... ***M. retusa*** Pilg.

13b. Suffrutices or herbs; internodes terete; leaves reddish on the underside, with two pairs of secondary veins reaching the apex; persistent bracteoles and bracteoles; flowers sessile; calyx truncate (Andes: northern Colombia and Venezuela) ..... ***M. liesneri*** Wurdack

14a. Inflorescences with abundant lanceolate bracts and bracteoles, persistent; internodes oblong (Andes: Western Cordillera of Colombia) ..... ***M. silverstonei*** Wurdack

14b. Inflorescence without bracts or bracteoles, if present, small and deciduous; internodes regularly quadrangular with rounded edges 15

15a. Flowers conspicuously pedicellate (pedicels >2 mm long); petals 3.8-5 mm long; anthers yellow, oblong-subulate, ending in an apical pore; stigma punctiform (Andes: Colombia, Ecuador and Peru) ..... ***M. asclepiadea*** Triana

15b. Flowers sessile or with pedicels ≤0.5 mm long; petals ≤1mm long; anthers white or cream, obovate and opening in a gap with 2-4 large pores; stigma capitate (Bolivia and Peruvian Andes) 16

16a. Flowers short-pedicellate; mature leaves ca. 10-12 × 4 cm, the young ones completely glabrous, dull green underside (regularly trees) (Andes: Peruvian Andes) ..... ***M. lilacina*** Triana

16b. Flowers completely sessile; mature leaves ca. 16-19 × 7 cm; young leaves minutely strigose on the upperside and light purple underside (regularly shrubs) (Andes: Peru) ..... ***M. opacifolia*** J.F.Macbr.

17a. Lower leaf surface completely covered by dense arachnoid or with lepidote stellate or bulbose stellate trichomes, covering the surface evenly (lower leaf-surface regularly whitish, clear brown or rufescent in dry material) 18

17b. Lower leaf surface clearly visible through the comparatively sparse indument of bulbous, stellate, pinoid or simple subulate trichomes, which are usually confined to the veins (lower surface regularly green or light brown) 22

18a. Leaves oblong-elliptic, ovate-elliptic or lanceolate, basally veined; inflorescences with secundiflorous or dichasial branches 19

18b. Leaves obovate, strongly plinerved; inflorescences with dichasial branches or with twigs with glomerular points 20

19a. Leaves oblong-elliptic; whitish arachnoid indumentum on the underside; inflorescences with secundiflorous branches; petals white (Amazonia and Chaco: Venezuela, Guyana, Suriname, Peru, Bolivia, northern, northeastern, central-western and southeast Brazil, Paraguay) ..... ***M. fallax*** DC.

19b. Leaves ovate-elliptic to lanceolate; indumentum of minute pinoid trichomes on the underside; inflorescences with dichasial branches; petals yellow (Andes: Bolivia) ..... ***M. sessilifolia*** Naudin

20a. Internodes, leaf underside, inflorescence and hypanthium-calyx with dense indumentum of stellate lepidote (adpressed) trichomes (lowlands: Venezuela, Trinidad & Tobago, Guyana, Suriname, French Guiana) ..... ***M. plukenetii*** Naudin

20b. Internodes, leaf underside and inflorescence with an indumentum of bulbose stellate trichomes 21

21a. Leaves obovate, with short-acuminate apex; inflorescence cylindrical, with short branches (less than 2 cm long); petals 4-4.5 mm long, externally pulverulent (Venezuela, Guiana, northern Brazil) ..... ***M. silicicola*** Gleason

21b. Leaves oblong-obovate, with obtuse apex; inflorescence pyramidal, with basal branches 8-12 cm long, with glomerular points; petals ca. 1.5 mm long, glabrous (southeastern Brazil) ..... ***M. robusta*** Cogn.

22a. Leaves on the upper surface rugose or bullate 23
22b. Leaves on the upper surface smooth 24
23a. Trees; leaves >40 cm long, obovate; apex of inflorescences dichasial; hypanthium with stipitate stellate trichomes; anthers magenta (Amazonian foothills: Colombia) ..... ***M. titanophylla*** Gleason
23b. Suffrutices or herbs up to 2 m tall; leaves <20 cm long; suborbicular to ovate; apex of inflorescence cephaloid; hypanthium with subulate trichomes; anthers white (widespread) ..... ***M. rufescens*** (Aubl.) DC.
24a. Leaves slightly or strongly plinerved 25
24b. Leaves with basal venation (nerved) 32
25a. Leaves slightly plinerved (5-12 mm above the leaf base) 26
25b. Leaves strongly plinerved (above 15 mm above the leaf base) 28
26a. Suffrutices or herbs; leaves oblong-ovate (not tapering towards the base); inflorescence pendulous (petals apically acute) (western foothills of the Andes, Biogeographic Chocó: Colombia, Ecuador) ..... ***M. bensparrei*** Gamba & Almeda
26b. Shrubs or trees; leaves obovate (tapering towards the base) to elliptic; inflorescence erect (petals apically rounded to truncate or acute) 27
27a. Internodes, petioles, and the undersides of leaves covered with a dense layer of pinoid trichomes; flowers without bracteoles, 5-merous; petals apically rounded (lowlands: Mexico, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyana, Ecuador, Peru, northern Brazil) ..... ***M. impetiolaris*** (Sw.) D.Don ex DC.
27b. Internodes, petioles, and the undersides of leaves covered with simple subulate trichomes (type 25 of Wurdack 1986); flowers with large white bracteoles, 6-merous; petals apically acute (southeast Brazil) ..... ***M. pectinata*** (Cogn.) R.Goldenb.
28a. Leaves pandurate (fiddle-shaped); petals ≤1mm long (Peruvian Andes) ..... ***M. pandurata*** Triana
28b. Leaves obovate to oblong; petals ≥3 mm long 29
29a. Branches, leaf undersides and inflorescences with simple subulate trichomes (type 25 of Wurdack 1986); flowers with large white bracteoles, 6-merous; petals apically acute (southeastern Brazil) ..... ***M. pectinata*** (Cogn.) R.Goldenb.
29b. Branches, leaf undersides and inflorescences with indument of dendritic with short axis and few-moderate terete arms or adpressed stellate trichomes (types 25 and 38 of Wurdack, 1986); flowers without bracteoles, 5-merous; petals apically rounded 30
30a. Branches, leaves on underside and inflorescences with dendritic trichomes with short axis and few-moderate terete arms (type 25 of Wurdack, 1986); internodes quadrangular with rounded edges; node with conspicuous interpetiolar line; petals 5-8 mm long; calyx truncate; stigma punctate or slightly expanded (widespread) ..... ***M. tomentosa*** (Rich.) D.Don ex DC. (including *M. biglandulosa* Gleason)
30b. Branches, leaf blades and inflorescence with adpressed stellate trichomes 0.15-0.3 mm diameter (type 38 of Wurdack, 1986); internodes flattened to oblong; nodes without interpetiolar line; petals 3-3.6 mm long; calyx lobed; stigma capitate 31
31a. Leaves obovate-elliptic, with one pair of secondary veins accompanying the midvein; anthers pinkish, with a dorsal pore; ovary 5-6-locular (Amazonian foothills: Colombia) ..... ***M. indiwasi*** Humberto Mend., Posada-Herrera & Edwin Trujillo
31b. Leaves oblong-elliptic, with 2 pairs of secondary veins; anthers white, with an apical or ventral pore; ovary 3-locular (Amazonia: Colombia, Ecuador, Peru, northern Brazil) ..... ***M. grandifoliata*** R.Goldenb. & Michelang.
32a. Indument of squamiform or stellate trichomes either adpressed or short stipitate 33
32b. Indument of smooth and subulate, tiny (mealy) or elongated pinoid, or elongated barbellate trichomes 36
33a. Squamiform stellate trichomes (adpressed); leaf apex obtuse; ratio of distances A (between the midvein and the first secondary vein) and B (the distance between the first secondary vein and the margin) in the middle part of the blade between 5-6 (secondary veins submarginal) (Andes: Peru) ..... ***M. dipsacea*** Naudin (includes to *M. falcata* Cogn.)

33b. Stipitate or bulbous stellate trichomes (not squamiform), with free branching; leaf apex acuminate; A/B ratio between 1.5-3 (secondary veins away from the leaf margin) 34

34a. Flowers 4-merous; leaves ovate-lanceolate; bracteoles on branchlets of inflorescences conspicuous, persistent (Andes above 2600 m elevation: Venezuela) .... ***M. boxii*** Wurdack

34b. Flowers 5-6-merous; leaves elliptic-obovate to oblong-obovate, completely sessile; bracteoles not present, if found then early deciduous 35

35a. Leaves 8-17 cm long, completely sessile, margin entire, with a pair of secondary veins; internodes with lax indumentum; leaf blades and hypanthium glabrescent; flowers pedicellate; petals ca. 1.5 mm long, glabrous; anthers oblong (Andes above 2000 m elevation: Colombia, Venezuela) .... ***M. dunstervillei*** Wurdack

35b. Leaves 40-50 cm long, with short petiole and denticulate margin, with 2 pairs of secondary veins; internodes, leaf underside and hypanthium with dense ferruginous indumentum; flowers sessile; petals externally pruinose, 5-7 mm long; anthers subulate (below 1500 m elevation in Andes, Colombia: Middle Magdalena and Amazonia, Venezuela, Trinidad & Tobago, Ecuador, Peru, northern and central-western Brazil) .... ***M. macrotis*** Cogn.

36a. Indument of smooth subulate trichomes 37

36b. Indument of elongated barbellate or tiny pinoid trichomes 38

37a. Lianescent plants with pendulous branches; internodes and veins of the leaf underside pubescent; leaves ovate with entire margin; flower 5-merous; hypanthium setulose; anthers white; ovary 3-locular (Andes: Ecuador) ..... ***M. vesca*** Wurdack

37b. Erect shrubs or suffrutices; internodes with lax indumentum, veins of the leaf underside glabrescent; leaves ovate-lanceolate with serrate margin; flower 4-merous; hypanthium glabrous; anthers purple; ovary 4-locular (Andes: Venezuela) .... ***M. pisinna*** Wurdack

38a. Leaves slightly unequal in size at the same node (slightly anisophyllous), with one pair of secondary veins; branches and leaf blades with indumentum of slightly elongated barbellate trichomes; branches of inflorescence with flowers in glomerular points; anthers white (Amazonia: Peru, Brazil) .... ***M. amplexicaulis*** Naudin

38b. Leaves isophyllous, with two pairs of secondary veins; branches and leaf blades with indumentum of minute pinoid trichomes; branches of inflorescences dichasial; anthers yellow 39

39a. Leaves broadly ovate, entire margin; underside with glabrous surface; hypanthium ribbed; petals externally pruinose (Andes: Colombia) ..... ***M. cruenta*** Triana

39b. Leaves ovate-lanceolate, margin undulate-denticulate; underside with dense light brown indumentum; hypanthium unribbed; petals glabrous (Andes: Bolivia) ..... ***M. sessilifolia*** Naudin

Discussion

The knowledge of the taxonomic richness of Melastomataceae in Colombia continues to grow, driven by the steady discovery of new species and records. Over the last 15 years, 49 species have been described for the country. The genera with the most descriptions include *Miconia* (14 spp), *Meriania* Sw. (11), *Allomaieta* Gleason (5), *Monochaetum* (DC.) Naudin (4), and *Blakea* (4), followed by *Axinaea* Ruiz & Pav. and *Graffenrieda* DC. (2 each). Additionally, one species was described for each of the following: *Alloneuron* Pilg., *Comolia* DC., *Chaetolepis* (DC.) Miq., *Ernestia* DC., *Microlicia* D. Don, *Quipuanthus* Michelang. & C. Ulloa, and *Wurdastom* B. Walln. (see: Mendoza-Cifuentes, 2011, 2018, 2020, 2021, 2022; Mendoza-Cifuentes and Fernández-Alonso, 2012; Almeda et al., 2014; Alvear and Almeda, 2014, 2019; Cotton et al., 2014; Gamba-Moreno and Almeda, 2014; Michelangeli, 2014; Mendoza-Cifuentes et al., 2014, 2018, 2019, 2024; Posada-Herrera and Mendoza-Cifuentes, 2016, 2023; Mendoza-Cifuentes and Posada-Herrera, 2018; Posada-Herrera and Almeda, 2018; Murillo-Serna et al., 2021, 2022, 2025a, b; Murillo-Serna and David-Higuita, 2021; Mendoza-Cifuentes and Castro, 2023; Urrea et al., 2023, 2024, 2025; Da Silva et al., 2024, 2025; Mendoza-Cifuentes and Trujillo-Trujillo, 2024; Mendoza-Cifuentes and Vargas, 2025; Gutierrez-Duque and Posada-Herrera, 2025;



Figure 10: Field images of different species with amplexicaul leaves. A. *Miconia appendiculata* Naudin; B. *Miconia asclepiadea* Triana (iNaturalist, 2021a); C. *Miconia alatinodis* Humberto Mend., Posada-Herrera & Edwin Trujillo; D. *Miconia liesneri* Wurdack; E. *Miconia indiwasi* Humberto Mend., Posada-Herrera & Edwin Trujillo; F. *Miconia fallax* DC. (iNaturalist, 2023a); G. *Miconia bensparrei* Gamba & Almeda (iNaturalist, 2020); H. *Miconia rufescens* (Aubl.) DC.; I. *Miconia rubricans* Triana; J. *Miconia plukenetii* Naudin (iNaturalist, 2019a); K. *Miconia macrotis* Cogn.; L. *Miconia impetiolaris* (Sw.) D. Don ex DC.; M. *Miconia tomentosa* (Rich.) D. Don ex DC.; N. *Miconia dipsacea* Naudin (iNaturalist, 2019b). Photos: A, M. Julian Aguirre; B. Ramazan Murtazaliev observation 103775664 CC BY-NC; C, D, E, H, I, K, L. Humberto Mendoza; F. João Arthur Rabello observation 171853952 CC BY; G. Rudy Gelis observation 61818929 ©, utilizada con permiso del autor de la foto; J. Gerry van Tonder observation 27622839 CC BY; N. Daniel Montesinos-Tubée observation 38794182 CC BY-NC.

Murillo-Serna and Michelangeli, 2025; Penneys et al., 2026).

Of these novelties, six originate from the Amazonian slope of the Andes in the departments Caquetá and Putumayo. Furthermore, nearly 75 new species records have been added to the national flora over the last decade, more than 50 of which correspond to these same departments (Mendoza-Cifuentes et al., 2021). The new chorological records for *Blakea* and *Salpinga* extend the known geographical ranges of taxa previously thought to be restricted to Peru and Ecuador. Additionally, the two new *Miconia* species have, so far, only been recorded in the Caquetá department. These findings corroborate this previous research, highlighting the high plant diversity and endemism characteristic of the Amazonian foothills in southern Colombia.

With more than 1900 species, *Miconia* is one among the 10 largest diverse genera restricted to the Neotropics (Michelangeli et al., 2022). However, comprehensive Neotropical species identification keys for this genus do not yet exist. The taxonomic keys developed for the two new *Miconia* species include over 50 species and represent a contribution to their identification.

The categorization of the two new *Miconia* species as Vulnerable (VU) is mainly due to their presence in national and regional conservation areas. Although future records could expand their distribution range, this would not significantly alter their threat category. Therefore, despite relying solely on the estimated Area of Occupancy (AOO), we suggest the Vulnerable category over Data Deficient (DD).

Author contributions

Conceptualization: HMC, JMPH, ETT; Data collection: HMC, ETT, AR; Funding acquisition: YKAS, AESS, EHDB, AR, ETT; Metodology: HMC, JMPH; Project administration: YKAS, AESS, EHDB, AR, ETT; Visualization: HMC, AR; Writing – review & editing: HMC, JMPH, ETT, AR.

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Declaration of Artificial Intelligence Use

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