AMPELOCERA PERCYHERNANDEZII (ULMACEAE), AN ENDANGERED NEW TREE SPECIES FROM THE COLOMBIAN DRY FOREST REMNANTS

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Abstract. *Ampelocera percyhernandezii,* a new tree species restricted to dry forest remnants located inside inter-Andean valleys in the upper Magdalena River basin (Cundinamarca and Tolima departments), is described and illustrated. The new taxon is proposed here based on a literature survey, examination of numerous herbarium *exssicatae*, and field observations. *Ampelocera percyhernandezii* is morphologically similar to *A. albertiae, A. longissima* and *A. macphersoni*. However, the differences between these species are contrasted in the diagnosis, discussion, Table 1, and the species key. The figures show fresh and dried material and a geographical distribution map based on occurrence records. Following the IUCN assessment tool, the conservation status of *A. percyhernandezii* is provisionally determined as endangered (EN). Additionally, habitat information, phenology, the vernacular names, and a key to the species of *Ampelocera* are provided. This new species raises to ten the number of *Ampelocera* taxa. Colombia has the highest diversity of the genus with seven species.

Keywords: Dry forest remnants, inter-Andean valleys, upper Magdalena River, endangered species, *Ampelocera*, Ulmaceae

Resumen. *Ampelocera percyhernandezii,* una nueva especie de árboles restringida a los remanentes de bosques secos localizados en los valles interandinos de la cuenca alta del río Magdalena (departamentos de Cundinamarca y Tolima), es descrita e ilustrada. Este nuevo taxon, se basó en revisiones bibliográficas, el estudio de numerosos *exsiccata* de herbarios, y observaciones en campo. *Ampelocera percyhernandezii* es morfológicamente similar a *A. albertiae, A. longissima y A. macphersoni*. Sin embargo, las diferencias con estas especies son contrastadas en la diagnosis, la tabla 1, las discusiones, y en la clave de las especies. Las figuras muestran el material fresco, seco, y un mapa distribución geográfica basado en los registros aquí presentados. De acuerdo a la evaluación de IUCN, el estado de conservación de *A. percyhernandezii* esta provisionalmente determinado como en peligro (EN). Adicionalmente, se presenta información acerca del hábitat, fenología, nombres vernaculos, y una clave para la identificación de las especies de *Ampelocera*. Esta nueva especie eleva en 10 el número de especies de *Ampelocera*. Colombia, es el país que posee la mayor diversidad del género con 7 especies.

Palabras clave: Bosques secos fragmentados, valles interandinos, alto río Magdalena, especies en peligro, *Ampelocera*, Ulmaceae

Ulmaceae (the Elm family), are a small group of deciduous and evergreen trees, shrubs, and, rarely, lianas or climbers (e.g., *Celtis* L.). The family is well known for its variety of breeding systems, its floral and fruit morph types, its use as an ornamental (e.g., *Ulmus* L.), strong wood (e.g., *Celtis* L. and *Ulmus* L.), and medicinal uses (Todzia, 1993; Sutar et al., 2016; Leme et al., 2018). The family is distributed throughout the temperate zones (Eastern Asia, mainly in China, and in the southeastern U.S.A.) and dry to wet tropical regions of the world (Africa, India, Asia, the Caribbean, Mexico, Central and South America), and currently comprises 7 genera and ca. 67 species (Fragnière et al., 2021).

Ulmaceae was proposed by the French naturalist and politician C. F. Brisseau de Mirbel (de Mirbel, 1815), who founded the science of plant cytology, histology, and physiology (Britannica, 2024). At that time the family contained two genera, *Celtis* and *Ulmus*, and, for about 150 years, it was divided into two subgroups or subfamilies (*Ulmoideae* Engler and *Celtidoideae* Engler) associated with each of the original genera (Manchester, 1989; Wiegrefe et al., 1998). Link (1831) and Grudzinskaya (1967) proposed two different families (Celtidaceae and Ulmaceae s.s.) within Ulmaceae, since many characters of the *Celtidoideae* have a greater affinity to Moraceae than to other Ulmaceae (Grudzinskaya, 1967; Chernik, 1982; Takaso and Tobe, 1990). Species of Ulmaceae exhibit an amazing diversity of breeding systems (monoecy, andromonoecy, hermaphroditism, or polygamy), a variety of floral types (staminate, pistillate, and/or perfect flowers), and a distinctive fruit morphology (for a review see: Grudzinskaya, 1967; Todzia, 1993; Leme et al., 2018; Fragnière et al, 2021).

Modern phylogenetic studies have revealed that the generic relationships in Ulmaceae form two main clades, one with three tropical genera (*Ampelocera* Klotzsch,

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Holoptelea Planch., and *Phyllostylon* Schűch Capan. ex Benth. & Hook. f.) and 13 species, and the other with four north temperate genera (*Hemiptelea* Planch., *Planera* J.F. Gmel., *Ulmus* L., and *Zelkova* Spach) and 43 species (Neubig et al., 2012; Zhang et al., 2021). The genus *Celtis* was placed in Cannabaceae, in accordance with the modern circumscription of this family, which resulted in the integration of the majority of celtoids into Cannabaceae (e.g., *Trema* Lour.) and their exclusion from Ulmaceae (Wiegrefe et al., 1998; Yang et al., 2013). Currently, Ulmaceae, together with Cannabaceae, Moraceae, and Urticaceae, form the urticalean rosid clade (Sytsma et al., 2002; Zhang et al., 2021), which belongs to the order Rosales (APG IV, 2016).

Ampelocera is a genus endemic to the Neotropics, found throughout southern Mexico (Campeche, Chiapas, Oaxaca, Tabasco, and Veracruz states), Central America, the Caribbean, Colombia, Venezuela (including the Coastal Cordillera), the Guianas, Ecuador, Perú, Bolivia, and southern Brazil (Todzia, 1989; Fragnière et al., 2021). The genus has 10 species, including the new species described herein. According to Todzia (1989, 1993), *Ampelocera* is characterized, and differs from the other Ulmaceae genera, by its tree habit, buttressed trunk, pinnate leaves (rarely pinnipalmate), oblique leaf base, 4–16 stamens (usually 2–4 times as many as perianth parts), bifid style, and its symmetrical or asymmetrical drupaceous fruit (oblong or spherical).

Todzia (1989) published a revision of *Ampelocera*, in which he recognized nine taxa and included the description of three new species. Since Todzia's contribution, no new species have been described. The genus is included in Flora de Nicaragua (Todzia, 2001), Flora of the Venezuelan Guayana (Miller and Berry, 2005), and Manual de Plantas de Costa Rica (Todzia, 2015).

The present contribution increases to seven the number of *Ampelocera* species known from Colombia, the country with the highest diversity of the genus. This new species was discovered during fieldwork supported by the "Universidad de Tolima," while establishing permanent plots and conducting general botanical collections in dry forests located in the upper Magdalena riven basin, Tolima department, Colombia. These studies were conducted in forest remnants in one of the largest dry forest reserves (ca. 150 ha) known as "Bosque Los Limones," a region on the western side of the Magdalena River.

Materials and Methods

The new species was initially collected in the dry forest remnants of the upper Magdalena riven basin, Tolima department, Colombia. Subsequently, more individuals of the species were identified and marked while setting up permanent plots. Specimens of the new species were compared with *Ampelocera* collections deposited in the following herbaria: COAH, COL, FMB, JBB, TOLI, UDBC (acronyms follow Thiers 2024, continuously updated). Historical and current taxonomic literature on *Ampelocera* was examined: the genus revision (Todzia, 1989), treatments of Ulmaceae in "Flora de Nicaragua" (Todzia, 2001), Flora of the Venezuelan Guayana (Miller and Berry, 2005), "Manual de Plantas de Costa Rica" (Todzia, 2015), and the "Catálogo de plantas y líquenes de Colombia" (Gradstein, 2016). Additionally, *Ampelocera* collections hosted by virtual herbaria, including those maintained by the Field Museum (F; http://emuweb.fieldmuseum.org/botany/taxonomic.php), Missouri Botanical Garden (MO; http://https://tropicos.org/home), and the New York Botanical Garden (NY; https://sweetgum.nybg.org/science/vh/), were consulted. Type specimens of *Ampelocera* species involved in this study were examined using online images from JSTOR Global Plants (https://plants.jstor.org/).

The illustration was done freehand (Fig. 1), and the photographs of flowers and fruits used to prepare the Lankester Composite Digital Plate (LCDP) were taken from samples in vivo, using a Nikon D7000 camera with a 105 mm macro lens and a Raynox 250 magnifying glass. The morphological measurements were carried out using a digital caliper and ImageJ software.

The specific terminology for vegetative characters, vestiture description, inflorescences, flowers, and fruit morphology follow Todzia (1989), Font-Quer (2001), and Harris and Harris (2006).

To determine the conservation status (IUCN, 2022), the extent of occurrence (EOO) and area of occupancy (AOO) were calculated using the Red List threat assessments in GeoCAT (Bachman et al., 2011), which is continually updated (https://geocat. kew.org/). The EOO is defined by the IUCN (2022) as the minimum convex polygon encompassing all known occurrences of a species. The AOO is the area within the EOO, which comprises 2 × 2 km grid cells containing known occurrence records.

Taxonomy

Ampelocera percyhernandezii Villanueva & Aymard, *sp. nov.*

TYPE**:** COLOMBIA. Tolima: Venadillo, Vereda Salto Nuevo, Bosque Los Limones, 4°40'26"N, 74°49'22"W, 253 m, 18 septiembre 2018 (fl), *B. Villanueva-T. & A. D. Páez 4308* (Holotype: TOL; Isotypes: COL, JAUM, UDBC). Fig. 1–2.

Ampelocera percyhernandezii resembles *A. albertiae* and *A. macphersonii*, but can be distinguished from these species by its coriaceous leaves, 3.5–16.0 × 1.8–5.1 cm, with pellucid dots on the blade, the inflorescence 2–22 mm long, its floral structures that are glabrous or minutely puberulent outside, 5–9(–12) stamens, filaments that are fasciated at the base, the absence of an extended connective, a densely pubescent ovary (with erect translucent trichomes), its style branches that are white on the ventral face, and its fruit with vestigial white filaments when dried.

Tree semi-deciduous, up to 20 m tall, buttresses to 2 m high, bark striated, younger branches and branchlets reddish brown, very sparsely puberulent, older branches and branchlets gray, sparsely puberulent to glabrescent and bark flaking off when mature; stipules 0.75–1.50 mm long,

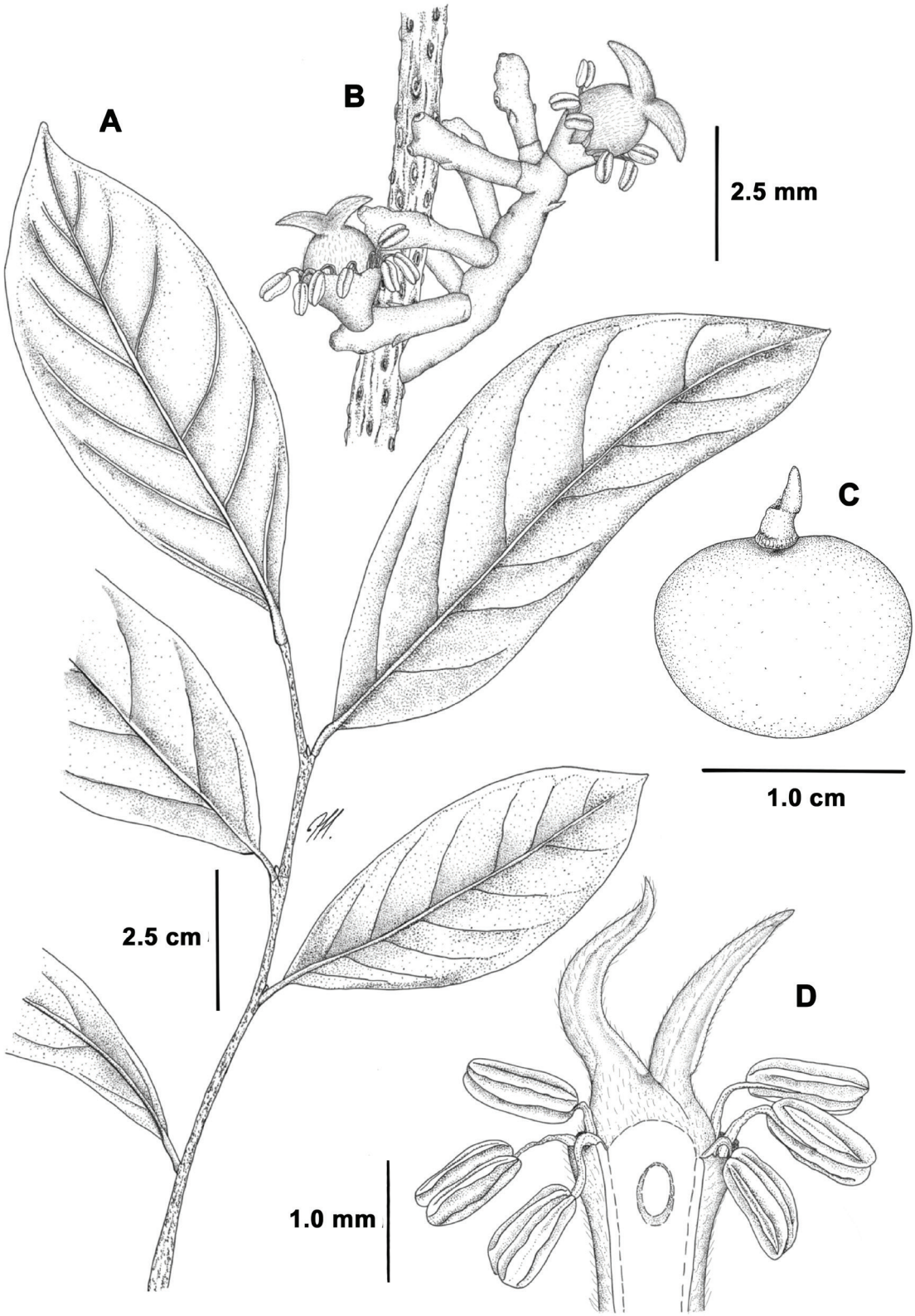

FIGURE 1. *Ampelocera percyhernandezii* Villanueva & Aymard. **A**, Habit, **B**, Perfect flower in frontal view showing the stamens, style branches, and a developed ovary, **C**, Fruit apex showing persistent style branches in anthesis, **D**, View of inflorescence. Drawn by Manuela Sánchez.

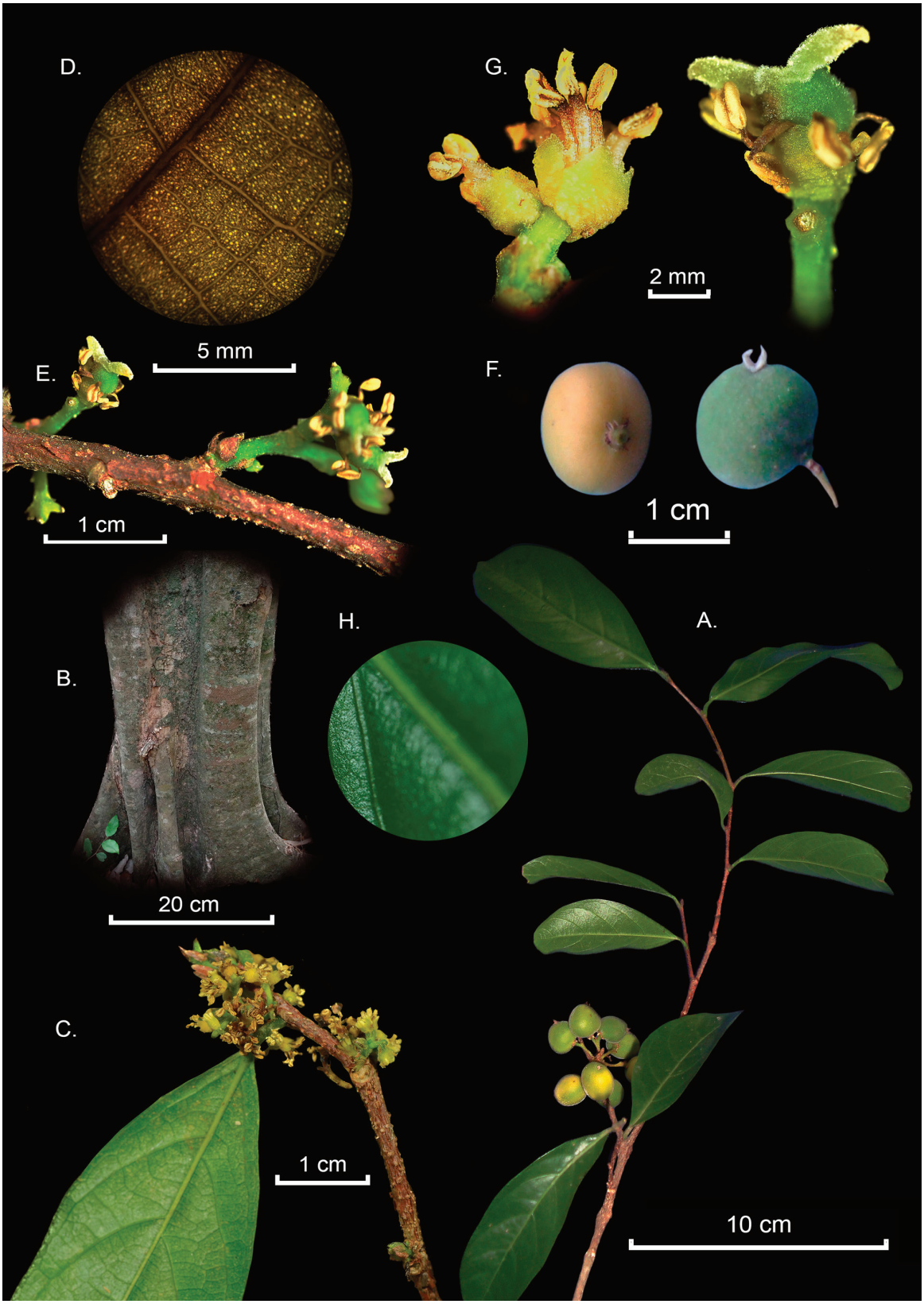

FIGURE 2. *Ampelocera percyhernandezii* Villanueva & Aymard. **A**, Habit showing branch with unripe fruit, **B**, Trunk with buttresses to 2 m high, **C** and **E**, Younger branches with lenticels and inflorescences, **D**, Leaf blade with pellucid dots (10x), **F**, Fruit with persistent stamens at the base (left): fruit with persistent style branches at the apex (right), **G**, Flower in anthesis (left); flower with a developed ovary (right), **H**, Detail of flat midvein on the upper surface. Photographs by B. Villanueva-Tamayo. Plate prepared by Daniel Amaya-Jiménez.

oblong, acute at the apex, glabrous on both sides, except at the base outside, which is covered by adpressed white trichomes, ciliate at the margins. *Leaves* elliptic to oblong, 3.5–16.0 × 1.8–5.1 cm, blades flexible (in vivo), drying coriaceous, pale green, yellow-green to pale gray, apex acute, base attenuate, subtruncate, glabrous and smooth on both surfaces, margins entire, midvein flat above, raised beneath, lateral veins 5–8 pairs, arcuate, flat adaxially, raised abaxially, inter-secondary tertiary veins strongly reticulate on both sides; petioles 4.1–6.5 mm long, canaliculate, smooth, sparsely pilose, drying tawny to reddish brown. *Inflorescence* axillary, short panicles on leafy branches, 2–22 mm long, rachis sparsely puberulent, often three-branched at the base or with a short peduncle (2–3 mm long), not densely flowered, with ca. 9 flowers, each branch 3-flowered. *Flowers*, perfect and functionally staminate, sub-sessile on the central branch, pedicellate on the lateral branches, pedicel 0.2–2.0 mm long (pubescence as on the rachis), subtended by coriaceous, ovate bracts located at the pedicel base, 1.5–1.7 × 1.2–1.4 mm, sparsely adpressed on both sides, calyx 1.0–1.2 mm long, yellow-green (in vivo), lobes 4, 0.2–0.4 mm long, glabrous or minutely puberulent outside; stamens 5–9(–12) in perfect flowers, ca. 7 in functionally staminate flowers, these with a dense, white pubescent conical pistillode, 1.0–1.5 mm long; filaments 2.0–2.5 mm long, ca. 0.38 mm wide at the base to 2/3 of its length, and ca. 0.8 mm at the apex, fasciated, canaliculate, glabrous, anthers dorsifixed, 0.9–1.2 long, glabrous, the connective not extending into a short strigose apicule; ovary oblong, green (in vivo), densely pubescent, trichomes erect, translucid 0.1–0.3 mm, style 2-branched, 1.5–1.8 mm long, free to base, dense white strigose, opening horizontal (in vivo), closed (in secco), the ovules in an apical placenta. *Fruit* yellow when mature (in vivo), 0.9–1.3 × 1.1–1.4 cm, oxidizing quickly to black or silver-brownish (in secco), asymmetrical, transversely obovoid, sparsely puberulent, with vestigial white filaments and persistent style branches (white on the ventral side) when mature. Seed not seen.

Phenology: The new species was collected with flowers in April and September (flowers in different ripening stages), and with fruit in June and September.

Etymology: *Ampelocera percyhernandezii* honors Percy Hernández (1963–), who is a prominent environmentalist and parataxonomist from the Tolima department. He has been a great defender and protector of the "Bosque Los Limones" area (4°40'26"N, 74°49'22"W, 253 m) to the extent that, if it were not for his conservation efforts, this unique dry forest of the upper Magdalena river valley would not exist.

Common names: The name "Huesito" was recorded during field work. However, in this region other taxa are also known by this common name, mainly *Casearia* spp. (Salicaceae: *C. corymbulosa* (Spruce ex Benth.) T. Samar. & M.H. Alford. and *C. thamnia* (L.) T. Samar. & M.H. Alford.).

Distribution and ecology: *Ampelocera percyhernandezii* is an endemic taxon from the upper Magdalena river valley in the Cundinamarca (San Juan de Rio Seco municipality) and Tolima (Armero, Honda, Ibagué, and Venadillo municipalities) departments, Colombia (Fig. 3). This is a region of dry forest on low hills and plains systems in inter-Andean valleys, located on the western bank of the upper Magdalena river, between 250–600 m elevation (Villanueva-Tamayo et al., 2023). These forests have a maximum slope of 45%, and the hills have an array of intermediate plains between them. They are compact, non-fragmented forests, some of which can be flooded in the rainy season. The most significant populations of *A. percyhernandezii* are found in dry plains and riparian forests along small drainage channels. This region is the same dry forest where *Cedrela gonzalopalominoi* Villanueva & M.E. Morales (Meliaceae) was found, a new species of cedar recently published (Villanueva-Tamayo et al., 2023).

Iconography: The junior author examined Celestino Mutis' watercolors of Colombian plants, made by the artists of the "Flora de la Real Expedición Botánica del Nuevo Reino de Granada," who studied the flora of Colombia under the direction of Mutis from 1783 to 1816. (These watercolors were not signed by the artists). Mutis assigned numbers to the collection specimens, but in accordance with the customs of his time he did not keep a consecutive series, but used different numerations for the different classes and genera of Linnaeus' system (Díaz-Piedrahita, 2016). The original order of the plates was modified by the great Colombian botanist José Jerónimo Triana, who visited Madrid on two occasions in 1866 and 1882 (Díaz-Piedrahita, 1990). He arranged them in 41 folders and classified them into families, tribes and genera following Endlicher's system (Endlicher, 1836–1840). This order was preserved until 1986, when a reordering was initiated following the sequence in which they appear in the 39 volumes of the Flora of the Royal Expedition that have been published since 1954. An extraordinarily artistic and accurate illustration representing a species of *Ampelocera* (Fig. 4) was found among the ca. six thousand plates. These plates are included in volume No. XIV (Duarte-Rojas and Fernández-Alonso, 2018) under numbers A-2800 (polychromatic) and 2800a,b (monochromatic). The latter volume number belongs to "Flora de la Real Expedición Botánica del Nuevo Reino de Granada." This flora was published in compliance with the Cultural Agreement between Spain and Colombia celebrated on November 4, 1952 (Pérez-Arbeláez et al. 1954).

These plates were made between 1785–1791, 19 and 52 years before Ulmaceae and the genus *Ampelocera* were described, respectively (de Mirbel, 1815; Klotzsch, 1847). It is important to emphasize in these particular plates, because no exsiccatae were found at the herbarium of the "Real Jardín Botánico," Madrid (MA). It was identified as *Ampelocera aff. albertiae* Todzia by Duarte-Rojas and Fernández-Alonso (2018). It is unfortunate that the locality for the Mutis collection is not available, but it can be assumed that this expedition mainly covered the upper Magdalena river, near Mariquita town (currently Tolima department), a region close to where *A. percyhernandezii* was found. Additionally, the plate details, such as the lenticellate branches, the leaf venation, the dense inflorescences, and the persistent style branches in the fruit, match those of the type of the new species.

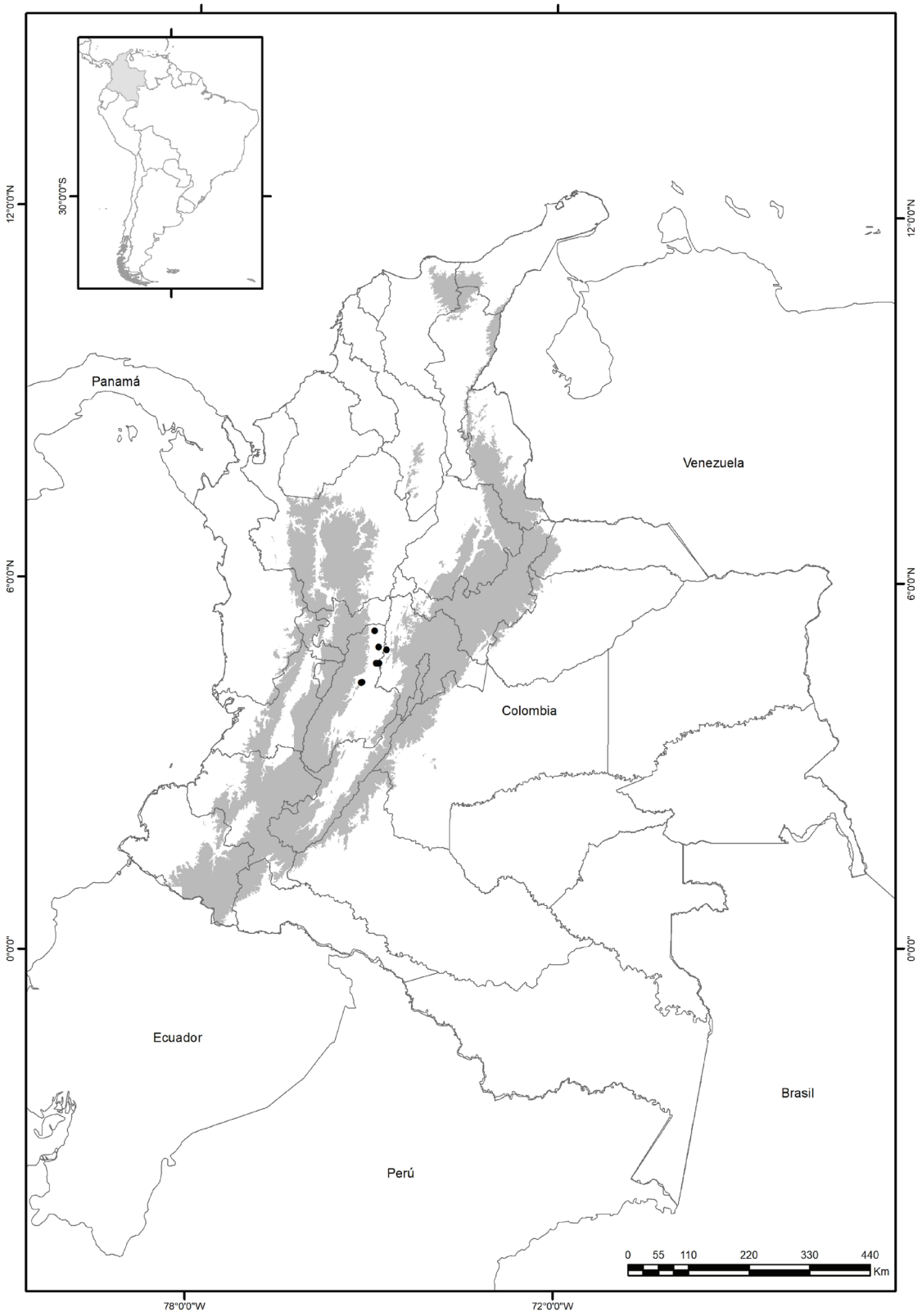

FIGURE 3. The geographical distribution of *Ampelocera percyhernandezii* Villanueva & Aymard in the Colombian Andes Cordillera. Prepared by Larry Niño.

FIGURE 4. *Ampelocera percyhernandezii* Villanueva & Aymard in *Iconografia Mutisiana*. Plate A-2800 [AJB, DIV. III A-2800 ©Real Jardín Botánico de Madrid–CSIC Archives].

Conservation status: Currently, *Ampelocera percyhernandezii* is known from the type and seven additional collections, three of which were collected near the type locality (see the additional specimens). In the type locality, 12 permanent plots, 50 × 50 m^2 (3 ha), were established, and all individuals with DBH greater than 10 cm were recorded (Villanueva-Tamayo et al., 2023). In this area, with a slope close to 36%, 1305 individuals were measured, 83 of which were the new species. Under IUCN (2022) guidelines, the conservation status of the new species should be Endangered. This result is based on our calculations that estimated the Area of Occupancy (AOO) as 20,000 km^2 and the Extent of Occurrence (EOO) as 1589.292 km^2 (following guidelines in IUCN, 2022). These guidelines estimate the EOO as the minimum convex polygon that includes all known occurrences of any taxon, and the AOO as the region inside the EOO that is occupied by the species (using a grid of 2 × 2 km^2). For threatened species, the AOO value should be above 10,000 km^2 (IUCN, 2022). Although conservation status assessments can be made for species with such small numbers of collections (Rivers et al., 2011), it is difficult to determine whether the appearance of rarity in a species is due to the lack of, or outdated, data, collection artifact, loss of habitat (Verspagen and Erkens, 2022), or to its actual rarity (Zizka et al., 2018). The plot data for this taxon and the EOO and the AOO calculations are consistent with the hypothesis raised by Brown et al. (2023), who noted that species with small ranges and/or population sizes are less likely to be encountered (and thus less likely to be described) and more likely to be threatened (Gaston, 2003). The conservation of these dry forests is at risk due to continuous deforestation in and degradation of the upper Magdalena valley. The area where *A. percyhernandezii and Cedrela gonzalopalominoi* occur is unprotected by "Sistema de Parques Nacionales Naturales de Colombia" (Villanueva-Tamayo et al., 2023). However, the region "Bosque Los Limones" is a primary forest (150 ha) and it is not currently protected by regional initiatives.

Furthermore, among the neotropical Ulmaceae, *Ampelocera albertiae* is cataloged as endangered (EN) under criteria B2ab(iii) and is one of the most threatened species under this IUCN category (López-Gallego and Morales, 2020). This taxon is endemic to Colombia and is known from only five populations. It's existence is affected by cattle ranching, mining activities, and artificial forest plantations (López-Gallego and Morales, 2020).

Additional specimens examined: COLOMBIA. Cundinamarca. San Juan de Río Seco: Finca Caracoli, 4°53'46"N, 74°42'12.5"W; 462 m, 05 Feb 2018 (ste.), *Andrés Torrejano, Rene López, Karen Polania, Alex Quiasua 358* (UDBC). Tolima. Armero: Cerro Santo Tomás, 4°55'707"N, 74°49'54"W; 250 m, Nov 1995 (ste.), *Humberto Mendoza-C. & Augusto Repizzo 64* (COL). Ibague: Quebrada La Honda, bosque Laserna, bosques junto al canal de riego, 4°20'57"N, 75°06'34"W; 779 m, 06 Feb 2016 (ste.), *Boris Villanueva-Tamayo, Juan D. Peñuela, & Juan D. Franco 2799* (JBB, TOLI); Hacienda Altamira (predios donados a la Universidad del Tolima), quebrada Honda, bosques junto al canal de riego, 4°20.883'N, 75°06.651'W; 779 m, 06 Feb 2019 (ste.), *Boris Villanueva-Tamayo, Juan D. Peñuela, & Juan D. Franco* 4422 (JBB, TOLI). Venadillo: Vereda salto Nuevo, bosque Los Limones, junto al camino del centro, 4°40'25.93"N, 74°49'39.7"O, 250 m, 07 April 2012 (fr), *Boris Villanueva, Alejandra Montoya, & F. Fernández 944* (JBB, TOLI); 4°40'16.24"N, 74°51'3.81"O, 256 m, 3 Sep 2016 (fr), *Boris Villanueva-Tamayo*, *Alejandro Rodriguez-Leal, & Andrea Murillo 2799* (TOLI); 4°40'28"N, 74°49'29"O, 349 m, 08 Jun 2019 (fl), *Boris Villanueva-Tamayo, Jaime Camargo, & Semillero de Maderas SIAM 4941* (TOLI).

The new species can be recognized by its flexible and glabrous leaf blade with an attenuate base, the raised midvein on the upper surface, and pellucid dots on the blade (using 10x magnification). The latter feature is recorded for the first time in the genus (see Fig. 2D). For the inflorescences on reduced branches, the flowers are protandrous and hermaphrodite. There are 5–9(–12) stamens that are fasciated at the base; the style branches are 1.5–1.8 mm long; and the ovary is densely pubescent with erect, translucent 0.1–0.3 mm trichomes. The fruits are ca. 1.3 cm long, sparsely puberulent, with persistent style branches that are white on the ventral side.

Ampelocera percyhernandezii is morphologically related to three taxa: *A. albertiae*, *A. macphersonii* Todzia, and *A. longissima* Todzia. Nonetheless, this new species differs from these three species and others of this genus in the characters discussed in the diagnosis, in Table 1, and in the following key.

KEY TO THE SPECIES OF *AMPELOCERA*
(Based on Todzia, 1989)

1a. Fruit strongly asymmetrical, broader than long; filaments slender throughout 2
1b. Fruit obovoid to globose, not strongly asymmetrical, longer than broad; filaments broadened basally 8
2a. Leaves usually dentate, occasionally entire; inflorescences borne on leafless branches; style branches 3–5 mm long 3
2b. Leaves always entire; inflorescences borne on leafy branches; style branches 1–2 mm long 5
3a. Leaf margin often revolute; calyx lobes villous; filaments ca. 2 mm long . . . . . *A. cubensis* (Cuba, Hispaniola)
3b. Leaf margin not revolute; calyx lobes sparsely puberulent to glabrous; filaments ca. 3 mm long . . . . . .4 (South America)
4a. Inflorescence 0.9–1.5 cm long, with 8–23 flowers; calyx 2.0–2.5 mm long; fruit 1.0–1.2 × 1.2–1.6 cm; densely pilose . . . . . *A. ruizii* (Peru, Bolivia, Amazonian Brazil)
4b. Inflorescence 0.5–0.8 cm long, with 4–9 flowers; calyx ca. 1.5 mm long; fruit 1.5–2.0 × 2.0–2.3 cm; glabrous . . . . . *A. glabra* (southeastern and central Brazil)
5a. Leaves chartaceous, unevenly colored when dried; inflorescence with 3–5 flowers; stamens ca. 16 . . . . . *A. macphersonii* (Panama, Colombia, Venezuela)
5b. Leaves subcoriaceous or coriaceous, uniformly colored when dried; inflorescence with 9–56 flowers; stamens 4–12. 6

KEY TO THE SPECIES OF *AMPELOCERA* CONT.
(Based on Todzia, 1989)

6a. Inflorescence (2.7–)3.5–7.8 cm long; elongate, loosely flowered; ovary sparsely puberulent . . . . . *A. longissima* (Colombia, Ecuador)
6b. Inflorescence 0.2–2.8 cm long; congested, densely flowered; ovary densely strigose puberulent or densely pubescent 7
7a. Leaves without pellucid dots; the connective extending into a short strigose apicule; ovary strigose; fruit densely pubescent, persistent style branches brown on the ventral face . . . . . *A. albertiae* (Colombia)
7b. Leaves with pellucid dots; the connective not extending into a short strigose apicule; ovary densely pubescent, fruit sparsely puberulent, persistent style branches white on the ventral face . . . . . *A. percyhernandezii* (Colombia)
8a. Leaves trinerved at the base; style branches ca. 4 mm long; stamens ca. 16; fruit densely brown tomentose, with longitudinal striations . . . . . *A. hottlei* (Southern Mexico to Colombia)
8b. Leaves pinnately veined at the base; style branches 1–2 mm long; stamens 6–8; fruit glabrous to sparsely puberulent, without longitudinal striations 9
9a. Leaf blades elliptic to oblong-elliptic, base rounded, cuneate to oblique; stipules narrowly to broadly lanceolate, strigose, 2–6 mm long; ovary densely puberulent; fruit with a thin endocarp . . . . . *A. edentula* (the Guianas, Amazon basin of Brazil, Venezuela, Colombia, Ecuador, Peru, and Bolivia)
9b. Leaf blades oblong to elliptic, base rounded to subcordate; stipules linear-lanceolate, sparsely puberulent, ca. 6 mm; ovary sparsely puberulent to glabrescent; fruit with a thick endocarp . . . . . *A. macrocarpa* (Honduras to Colombia and Venezuela)

TABLE 1. Comparison of diagnostic morphological characters of *Ampelocera percyhernandezii* Villanueva & Aymard and closely related species.

CHARACTERS	A. *ALBERTIAE*	*A. MACPHERSONII*	*A. LONGISSIMA*	*A. PERCYHERNANDEZII*
Leaf blade and midvein beneath	Subcoriaceous, 7–12 cm long uniformy colored when dried, midvein raised	Chartaceous, 7.5–21 cm long, unevenly colored when dried, midvein slightly canaliculate	Subcoriaceous, 8.5–17.4 cm long uniformly when dried, midvein raised	Coriaceous, 3.5–16.0 cm long, uniformly colored when dried, midvein raised
Pellucid points on the leaf blade	Absent	Absent	Present	Present
Inflorescence raquises length	0.6–2.8 cm	0.8–1.2 cm	(-2.7)3-5–8 cm	0.2–2.2 cm
Stamens number	4–12	ca. 16	4–10	5–9(-12)
Connective	extending into a short strigose apex	No extending	No extending	No extending
Ovary pubescence	Densely strigose	Densely pubescent	Sparsely puberulent	Densely pubescent
Fruit size and pubescence	0.9–1.2 × 1.4–1.7, densely pubescent	1.2–1.6 × 1.6–1.8 cm, densely pubescent	0.6–1 × 1–1.4, glabrous	0.9–1.3 × 1.1–1.4, sparsely puberulent

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