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***Pleurothallis moniquirensis* (Orchidaceae, Pleurothallidinae): A new species from the Eastern Andes of Colombia threatened by habitat loss, illegal collection, and mining**

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Abstract

A new species of the genus *Pleurothallis*, discovered in the department of Boyacá, in the Eastern Andes of Colombia, is presented and illustrated. This species shows morphological similarities with *Pleurothallis petroana*; however, it differs in its oblong dorsal sepal; narrowly ovate, convex synsepal with strongly revolute margins; and lanceolate lip that is verrucose-papillose. In addition to its taxonomic description, its morphological affinities are discussed, and notes on its ecology and conservation status are provided. Our fieldwork data provide strong evidence to categorize the new species as Endangered under criteria B1ab(v)+B2ab(v)+C2a(i) due to its restricted distribution, commercial use in the local market, and the potential threat to its species range due to the establishment of a mine, and the high level of habitat loss around its occurrence.

Key words: Andes, deforestation, illegal collection, taxonomy

Introduction

Colombia has one of the highest levels of orchid diversity in the world, with over 4300 species (POWO 2025), and new species are discovered each year (Morales *et al.* 2023, Moreno *et al.* 2023). However, many new species inhabit fragmented landscapes, where natural habitat cover is severely reduced, disrupting biogeographical forces that shape orchid communities (Parra-Sanchez *et al.* 2024). Ergo, it has become increasingly important to describe and quantify the abiotic conditions in which these species now persist.

A useful framework for understanding the influence of these human-dominated landscapes on species includes three key processes: edge effects, forest cover, and fragmentation (Fahrig 2013, Smith *et al.* 2011). Edge effects quantify the extent of habitat edges relative to area, which can modify microclimatic conditions and species interactions, often favouring edge-tolerant species while disadvantaging interior specialists (Fletcher 2005). Forest cover reflects overall habitat availability, with higher values indicating greater resources and ecological connectivity, both crucial for species survival (Fahrig 2013). Fragmentation *per se*, assessed by the number of discrete forests patches, reveals the extent of habitat subdivision, which can impede dispersal, reduce viable population sizes, and isolate species (Fahrig 2017). Together, these landscape processes provide critical insights into the ecological dynamics that underpin species occurrence and support evidence-based conservation planning (Arroyo-Rodríguez *et al.* 2020).

Andean orchids such as species of the genus *Pleurothallis* R.Br. (1813: 211) are affected by habitat loss and destruction, illegal collection for trade, and climate change (Hinsley & Roberts 2018, Wraith & Pickering 2018). The combination of high species richness and ongoing threats underscores the need for greater taxonomic clarity in *Pleurothallis*, as conservation efforts depend on the ability to distinguish and prioritize vulnerable taxa. *Pleurothallis* ranks fourth in species diversity within the subtribe Pleurothallidinae, after *Stelis* Swartz (1799a: 239), *Lepanthes* Swartz (1799b: 85), and *Masdevallia* Ruiz & Pavón (1794: 122) (Karremans & Vieira-Urbe 2020), with 581 recognized species, not including the most recently described taxa (POWO 2025, Damián-Parizaca *et al.* 2025, Sierra-Ariza 2024). The high species richness and remarkable floral morphological similarity have complicated the delimitation of the genus, particularly in the case of cryptic species that form complexes within it (Wilson *et al.* 2017a, 2017b, Karremans & Jiménez 2018).

In countries with a high diversity of *Pleurothallis*, such as Colombia, where 247 species have been reported (Karremans *et al.* 2023), the taxonomic challenge intensifies due to the large number of species to classify and differentiate. Within this context, the subsection *Macrophyllae-Fasciculatae* (1988: 133) is one of the most recognized and diverse groups within the genus. Morphologically, species in this subsection are characterized by sessile leaves, generally with cordate bases. The inflorescences typically feature a short peduncle and bear single- or multi-flowered clusters that may bloom simultaneously or successively. The flowers can be either resupinate or non-resupinate, with lateral sepals fused into a synsepal resembling the dorsal sepal. Additional diagnostic traits include a bilobed stigma and a lip that either rests on or slightly rises above the synsepal (Lindley 1859, Luer 2005, Rojas-Alvarado & Karremans 2024, Wilson *et al.* 2018).

In this paper, we describe and illustrate a new species of *Pleurothallis* subsection *Macrophyllae-Fasciculatae*, found in the department of Boyacá, Colombia. This species belongs to the same informal taxonomic group previously referred to as the “scabrilinguis group” (Vélez-Abarca *et al.* 2022, Sierra-Ariza 2023), which we here rename the “petroana group” to avoid confusion arising from the unresolved identity of the Peruvian species *Pleurothallis scabrilinguis* Lindl. (1836: 354). This group is characterized by flowers with linear and falcate petals, a large, flattened labellum with irregular texture—whether cellular, verrucose, papillose, pilose, or vesiculate—and a prominently developed basal glenion (Vélez-Abarca *et al.* 2022, Sierra-Ariza 2023). In addition to its taxonomic description, its morphological affinities are analyzed, and notes on its ecology and conservation status are provided. Finally, a distribution map is included to complement the information on its location and vulnerability. The integration of this ecological and social context in the discovery of species is essential to inform conservation priorities.

Material and methods

Taxonomic methods

The specimens were photographed in detail using a Nikon D5300 digital camera equipped with a NIKKOR AF 105 mm f/2.8 D Micro lens to document their morphological characteristics. The figures were created using Adobe Photoshop® 2024 (25.3.1), and the illustration was made with the Procreate application on a seventh-generation Apple iPad.

The collected specimens were stored in newspaper impregnated with 75% ethanol, while the floral structures were preserved in a mixture of glycerin and 70% alcohol in equal parts. Subsequently, the material was dried in an electric oven at 75°C for 14 hours and deposited in the VALLE Herbarium collection. The floral structures were examined using a Motic SMZ 168 LED stereoscope. To confirm the identity of the new species we reviewed monographs on the systematics of *Pleurothallis* section *Macrophyllae-Fasciculatae* (Luer 1988, 2005, 2011, Vélez-Abarca *et al.* 2022, Sierra-Ariza 2023). Additionally, online specimens from the AMES (www.huh.harvard.edu) and KEW (apps.kew.org/herbcat/gotoHomePage.do) were consulted, and specimens from the national collections TOLI, HPUJ, JBB, and COL were examined during herbarium visits.

Conservation status

We assessed the conservation status of the species following the IUCN Red List Categories and Criteria (IUCN 2022). To calculate the Extent of Occurrence (EOO) and Area of Occupancy (AOO). EOO was calculated as the minimum convex polygon encompassing all known occurrence points, while AOO was determined using a 2 km × 2 km grid overlay, as recommended by the IUCN guidelines. We then calculated area of habitat (AOH, Brooks *et al.* 2019)

excluding areas such as elevations outside the known range (+ 100 m as a conservative measure), urban areas, pastures, and crops that are unsuitable habitat for the new species, and the threat that a mine for aggregates could exert. This standardized approach ensures a robust assessment of the species geographic range and informs conservation planning by quantifying its spatial distribution and habitat availability.

Further work was conducted at the landscape-scale to quantify the threats that the species might be facing across human-dominated landscapes. We used a proven approach in orchid research, to quantify the percentage of forest cover and degree of fragmentation at the precise locations of species' occurrences (Parra-Sanchez *et al.* 2023). Our analyses were based on the local landscape concept proposed by Fahrig (2013), where we quantified landscape-scale metrics within ten circular landscapes centered on each recorded population, using buffer distances of 100, 200, 500, 800, 1000, 1200, 1400, 1600, 2000, and 2400 meters. This approach was chosen due to the lack of data or prior knowledge regarding the most relevant spatial scale at which the species interacts with its landscape (Jackson & Fahrig 2015). We employed three widely studied landscape-scale metrics derived from forest cover maps with a 30 m resolution from the year 2021 (Hansen *et al.* 2013, Figure 1). These metrics included (1) percentage of forest cover, used as a proxy for habitat loss (Fahrig 2017); (2) the number of patches, representing habitat fragmentation; and (3) edge density, which quantifies edge effects, both of which are commonly used in fragmentation studies (Fahrig 2017). Habitat was defined as forested areas depicted on the maps. All metrics were calculated using the “*landscapemetrics*” package (Hesselbarth *et al.* 2019), in the R environment, version 2022.02.1 (R Core Team 2022).

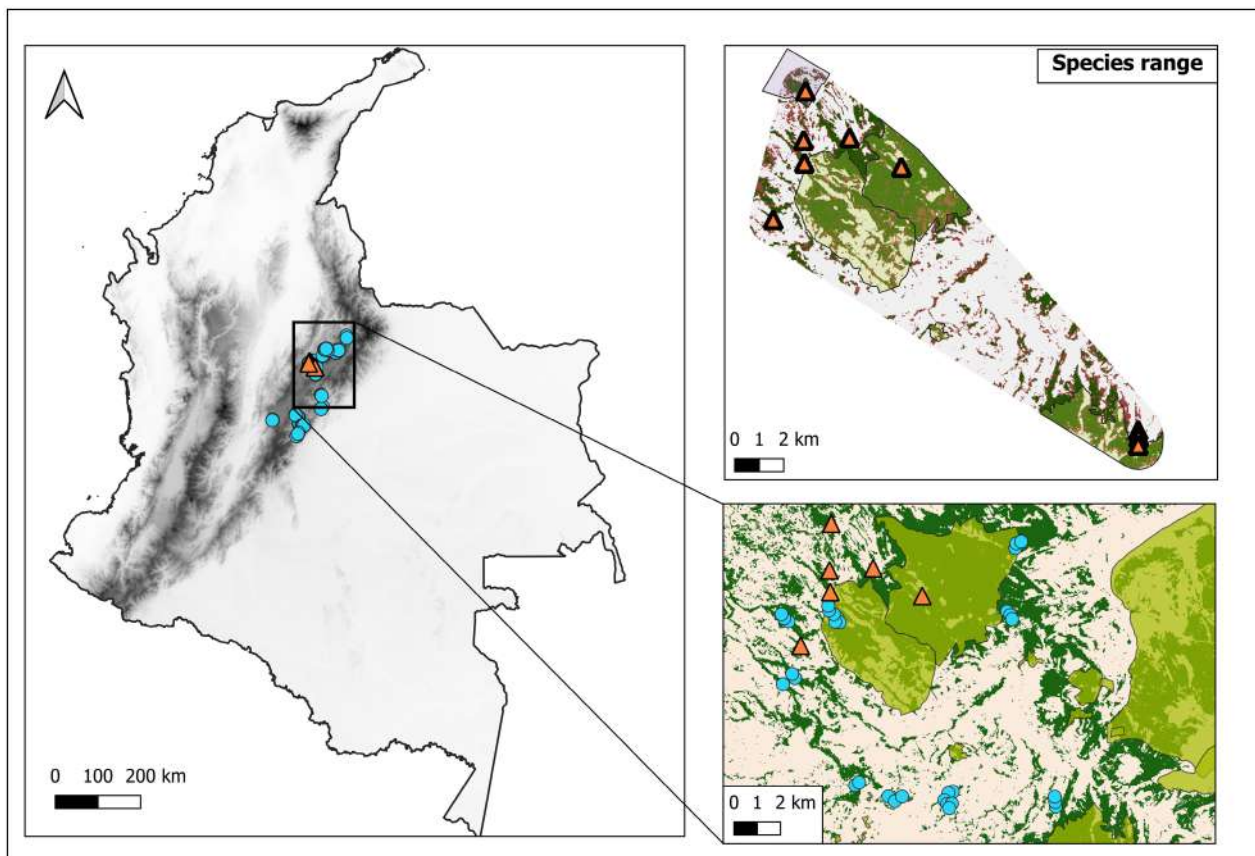


FIGURE 1. Distribution of *Pleurothallis moniquirensis* Sierra-Ariza, E.Parra & Mark Wilson and study area in the Eastern Cordillera of the Colombian Andes. Left panel shows the distribution of *P. moniquirensis* (orange triangle), sampling sites (blue dots, n= 341 plots), and elevation (digital elevation model from Tadono *et al.* 2014). Upper right panel displays forest cover (green) and the absence of forest cover (grey; Vancutsem *et al.* 2021), protected areas (polygons in green) sampling plots, and species' occurrence. Lower right panel, species range based on EOO (extend of occurrence) buffered at 1000 m to accommodate potential area of occurrence. Map composed by E.Parra-Sánchez using QGis 3.241.

Taxonomy

Pleurothallis moniquirensis Sierra-Ariza, E.Parra & Mark Wilson, *sp. nov.* (Figure 2–5).

Type:—COLOMBIA. Boyacá: Municipio de Moniquirá, Serranía del Peligro, 2530 m a.s.l., August 2019, E. Parra-Sánchez 2455 (holotype: VALLE!).

Pleurothallis moniquirensis is similar to *Pleurothallis petroana* Sierra-Ariza (2023: 39), but can be distinguished by its smaller, slimmer flowers, an oblong dorsal sepal (vs. oblong-lanceolate), narrowly ovate, convex synsepal with strongly revolute margins (vs. the ovate, concave), and a lanceolate lip that is verrucose-papillose (vs. ovate-lanceolate, verrucose-papillose, and slightly pilose).

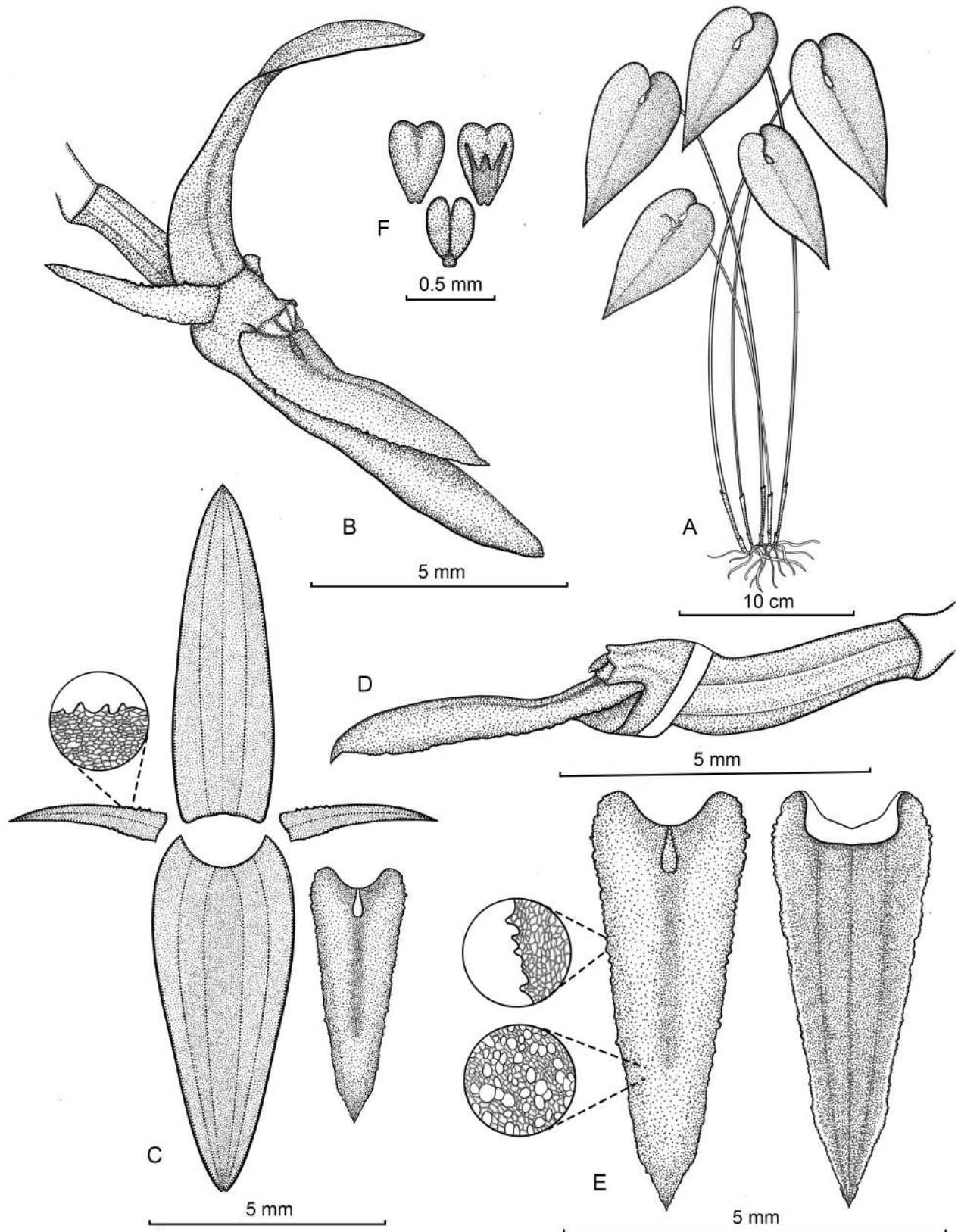


FIGURE 2. *Pleurothallis moniquirensis* Sierra-Ariza, E.Parra & Mark Wilson. **A.** Habit. **B.** Flower. **C.** Dissected perianth. **D.** Lip and column, lateral view. **E.** Lip, adaxial and abaxial views. Illustration by M. A. Sierra-Ariza.



FIGURE 3. Morphological comparison of the flower of *Pleurothallis moniquirensis* Sierra-Ariza, E.Parra & Mark Wilson (A–C) and *P. petroana* Sierra-Ariza. (B–D). Photographs by M. Wilson (A, C) and M. A. Sierra-Ariza (B, D). Prepared by M. A. Sierra-Ariza.

Description:—*Plant* 16 to 29 cm tall, epiphytic, caespitose, erect to suberect. *Roots* slender, 1.2 mm in diameter. *Ramicauls* yellow-green, 14–28 cm long, with a sheath located at the first basal third and two other sheaths at the base, tubular, broad, papyraceous, brown. *Leaf* light green, bright, coriaceous, minutely papillate, ovate, acuminate, 8.0–11.5 × 4.0–5.5 cm, the base sessile, cordate. *Inflorescence* with several simultaneous flowers, enclosed at the base by a spathaceous bract ca. 7.0 mm long; *peduncle* terete, green, 5.0 mm long; *floral bract* tubular, papyraceous, acute, 1.8–3.0 mm long. *Pedicel* terete, up to 4.7 mm long. *Ovary* pedicellate, light green, papillate, terete, longitudinally sulcate, covered with black dots, 3.8 mm long. *Flowers* resupinate, red with pale-yellow. *Sepals* membranaceous, glandular-papillate. *Dorsal sepal* red with margins pale-yellow, oblong, acute, 7.2–7.6 × 2.2–2.4 mm, 3-veined. *Lateral sepals*, connate into a narrowly ovate, bifid *synsepal*, red with a central yellow stripe and pale-yellow margins, convex, with strongly revolute margins 7.4–7.8 × 3.6–4.0 mm, 4-veined. *Petals* red, margins pale yellow, linear, acuminate, papillose, inclined towards the ovary, margins irregular, minutely denticulate, 4.2–4.4 × 0.7–0.9 mm, 1-veined. *Lip* yellow-red, fleshy, convex, lanceolate, acuminate, verrucose-papillose, margins irregular, minutely lobed, 5.2–5.4 × 1.8–2 mm,

3-veined, with a small, oblanceolate *glenion* near the base, the base subcordate forming two pronounced lobes, ovate. *Column* light red, short, broad, semiterete, with margins irregular, 0.7×1.0 mm.; *stigma* apical, bilobed. *Anther cap* light red, apical, obovate, minutely papillose, 0.4×0.3 mm. *Pollinia* 2, yellow, obovoid. *Capsule* not seen.



FIGURE 4. Plant on display for sale in a local nursery near the type locality. Photograph by Cabildo Verde.

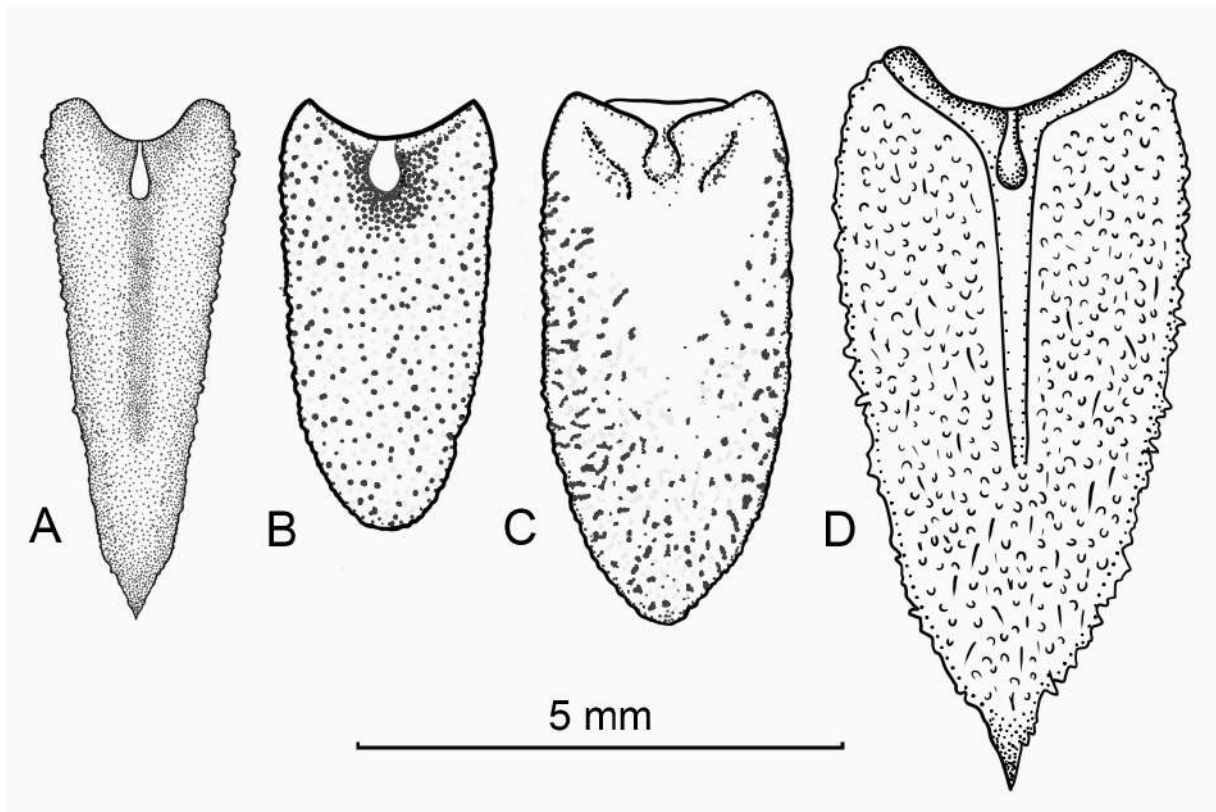


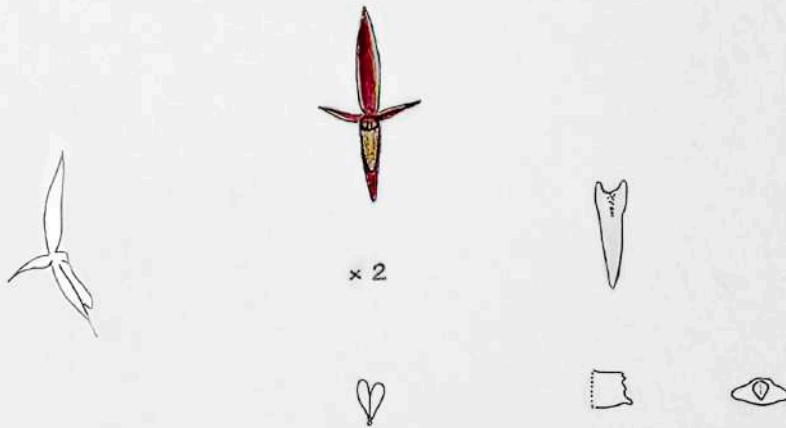
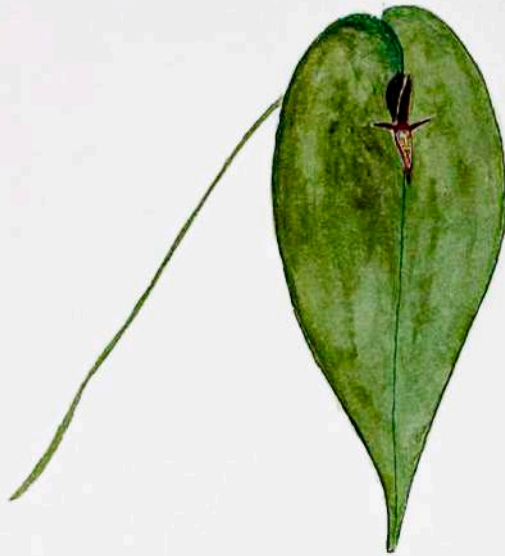
FIGURE 5. Morphological comparison of the labella of **A.** *Pleurothallis moniquirensis* Sierra-Ariza, E. Parra & Mark Wilson; **B.** *Pleurothallis applanata* Luer & Dalström; **C.** *Pleurothallis paquishae* Luer; and **D.** *Pleurothallis petroana* Sierra-Ariza. Redrawn by M. A. Sierra-Ariza: A. based on the holotype (E. Parra-Sánchez 2455 [VALLE]); B. based on illustration 16302 by C. Luer (MO [S. Dalström & T. Höjjer 1060]); C. based on illustration 16318 by C. Luer (MO [F. L. Stevenson 89-1217-5]); and D. based on a drawing by A. Albino Bohórquez (TOLI [M. A. Sierra-Ariza & A. Albino Bohórquez 194]).

Distribution and ecology:—*Pleurothallis moniquirensis* has been found in six forest fragments of Andean Forest in the Eastern Cordillera in Boyacá, Colombia (Figure 4). The species elevational range goes from 2059 to 2950 m in elevation. We obtained a census of nine records across six forest fragments. Plants of the new species were found growing as epiphytes on fallen branches as well as on trees and lianas heavily covered by moss up to 2 meters above ground. Populations have been registered inside forests with dense canopy cover.

Etymology:—In honor of the municipality of Moniquirá, Boyacá, in Colombia, the place where this species was discovered, in recognition of its rich biodiversity, cultural heritage, and the efforts of its community to conserve and protect its natural environment.

Conservation status:—Our study provides strong evidence that the new species is geographically rare, with a small population size, and high specialized habitat requirements. We proposed that the new species needs to be categorized as Endangered under Criterion B1ab(v)+B2ab(v) + C2a(i) according to the IUCN criteria (IUCN 2022). The Extent of Occurrence (EOO) is 55.41 km², and the Area of Occupancy (AOO) is 28.1 km², both of which fall below the thresholds for the Endangered category. Within the EOO, only 26 km² is identified as suitable habitat, indicating a highly restricted distribution. Of the six known sites, five exhibit low forest cover (30-40% within a 1,000 m landscape scale) and significant fragmentation, with 100-120 forest fragments per 1,000 m. This fragmentation and habitat limitation suggest ongoing declines in habitat quality and population size. We found only 57 adult individuals growing epiphytically in the understory across the nine locations. Furthermore, the population is fragmented across six fragments, with a range of 5 to 12 individuals per site, highlighting the vulnerability of the species to stochastic events and local extinctions.

Specifically, we found that only site number 2 has high forest cover (73% +/- 18 across the ten spatial scales) and low fragmentation (mean= 5 fragments + 17), but it has a high exposure to pastures (edge density of 100 m +/- 80). Despite having high forest cover the habitat shows high permeability crucial for species sensitive to the conditions of high radiation and low humidity in the forest edge (Parra Sanchez *et al.* 2016). Sites 1, 4, 7, 8, and 9 have low forest cover (<40% across the spatial scales).



Pleurothallis undulata P. & G.

FIGURE 6. Drawing of *Pleurothallis moniquirensis* Sierra-Ariza, E. Parra & Mark Wilson, originally made under the name *P. undulata* Poepp. & Endl., by Pedro Ortiz Valdivieso, plate No. 38, deposited at HPUJ Herbarium.

Our protocol reduced sampling bias whilst providing evidence of the geographical extent where the new species occurs (Parra-Sanchez *et al.* 2023, Parra-Sanchez *et al.* 2025). On the one hand, we used a randomized sampling method that reduces sampling bias and reduce the risk of the researchers' personal knowledge, preferences, or expectations. Sampling randomization ensures that all potential locations within a study area have an equal chance of being surveyed. On the other hand, the sampling effort provides robust evidence of the new species' highly restricted geographic extent and rarity in terms of population size (individuals within 5 m).

This landscape-scale analyses show that the new species faces reduction in its species range due to the potential establishment of mining for aggregates, plus illegal collection. This finding aligns with other new species in Colombia embedded in highly fragmented landscapes with low forest cover (Parra-Sanchez *et al.* 2023). Furthermore, new species are collected for sale in regulated and unregulated markets (Hinsley & Roberts 2018, Parra-Sanchez & Baquero 2023, Wraith & Pickering 2018). In specific, the range of the new species is under threat due to the high fragmentation across all occurrences but also due to a company that has requested the exploitation of a 3.45 km² polygon which threatens not only the species range but also the populations directly where 11 individuals occurred. Second, the community found the species being traded by locals (Figure 7). Three individuals of the new species were found in a local nursery for sale at a cost of USD \$4 for each plant. This provides further evidence of the delicate situation of the species traded even before the formal description of the species.

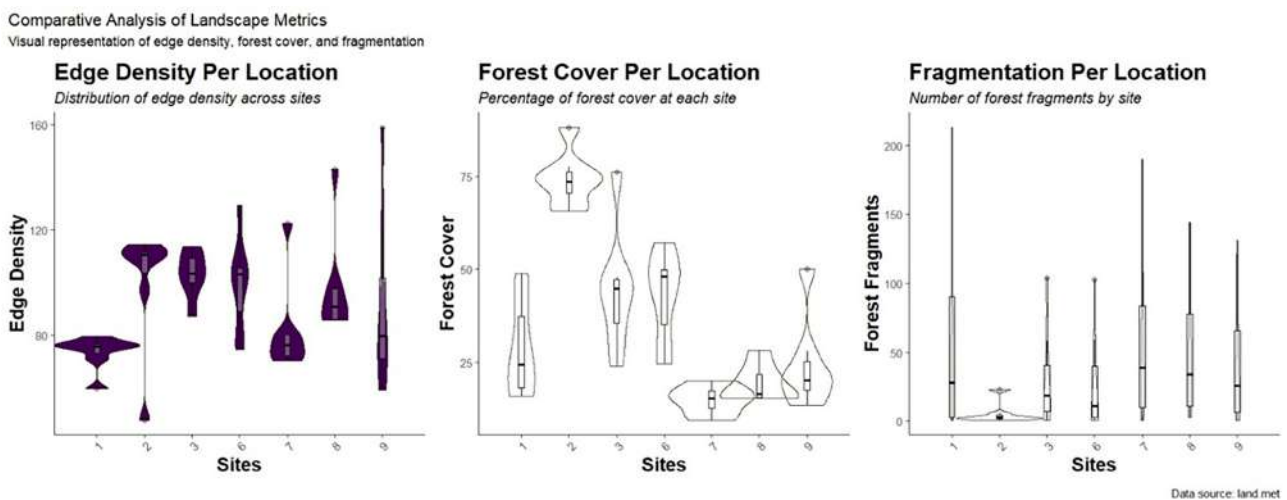


FIGURE 7. Landscape analysis of the six site locations of *Pleurothallis moniquirensis* Sierra-Ariza, E.Parra & Mark Wilson. The left panel displays edge density per location, measured as the total meters of forest edge exposed to the surrounding matrix across seven spatial scales. The right panel illustrates fragmentation per location, represented by the number of forest fragments across seven spatial scales. The center panel shows forest cover per location, expressed as the percentage of forest cover across the same seven spatial scales. Prepared by Edicson Parra on ggplot2.

From a conservation perspective, our findings collectively inform strategies to preserve the species' occurrence. Sites with low forest cover or high fragmentation may require interventions such as reforestation or corridor establishment to enhance connectivity and reduce isolation. The findings of this study provide a strong scientific basis for habitat protection efforts, reinforcing the need for conservation policies that limit mining expansion and promote habitat restoration. Given that the species is Endangered, with its population fragmented across sites with low forest cover and high edge effects, conservation strategies should prioritize natural restoration that have shown better results in the Andes, ensuring habitat connectivity, and legal protections (Edwards *et al.* 2021, Gilroy *et al.* 2014, González del Pliego *et al.* 2016). Furthermore, activities addressing the effects of overcollection in orchids should be deployed to locals, with the aim of halting illegal collection. These activities are being planned by the NGO partner team. By making the community an integral part of the research process, this study fosters local stewardship and ensures that scientific knowledge is directly translated into conservation efforts aiming to support local empowerment (Figure 8).

Taxonomic discussion:—The new species shares morphological traits with *Pleurothallis petroana*, *Pleurothallis paquishae* Luer (1996: 176), and *Pleurothallis applanata* Luer & Dalström (1996: 147), but floral traits and geographical distribution provide sufficient evidence to propose *P. moniquirensis* as a new species (Figure 5). *Pleurothallis moniquirensis* is morphologically closest to *P. petroana* but differs from it by the dorsal sepal being oblong, 7.2–7.6 × 2.2–2.4 mm (vs. the dorsal sepal oblong-lanceolate, 12.0–15.0 × 3.2–4.0 mm); the narrowly ovate, convex synsepal with strongly revolute margins, 7.4–7.8 × 3.6–4.0 mm (vs. the ovate, concave, 12.3–14.0 × 8.3–9.0 mm); the lip

lanceolate, 5.2–5.4 × 1.8–2.0 mm, only verrucose-papillose with irregular, minutely lobed margins (*vs.* the lip oblong-lanceolate, 7.5–8.2 × 3.0–3.4 mm, verrucose-papillose, slightly pilose, with irregular, denticulate-ciliate margins); and the oblanceolate glenion (*vs.* the spatulate glenion).

Dulce peligro, *Dulce periculum*.

Moniquirá, Ciudad dulce de Colombia, es reconocida por el ensoñador y coqueto aroma con que la centenaria industria bocadillera y panelera perfuma sus campos y calles endulzando la vida de quienes seducidos olfativamente caen dispuestos a paladear su tentación.

Entre los dos mil y dos mil ochocientos metros de altitud, se alzan sobre la cordillera oriental colombiana las majestuosas montañas boyacenses de la *Serranía del Peligro*, caracterizada por espesos bosques andinos, enmarcados entre el azul del cielo y verticales paredes de piedra arenisca desde donde saltan alegres cascadas, que acuatizan en el frío río Pómeica, impresionando con su serena belleza natural y biodiversidad a los amantes de la naturaleza y los placeres contemplativos.

A pesar de la inquietante connotación que el nombre sugiere, atribuido al agreste y difícil terreno, pues dicen los viejos, que especialmente durante las estaciones lluviosas en tiempos anteriores al siglo pasado, la marcha se convertía para las recias mulas y osadas personas en un verdadero vía crucis.

Cuenta con algunas especies endémicas, presta valiosos servicios ecosistémicos, es captadora y reguladora del agua para Moniquirá y buena parte de las provincias de Ricaurte y Vélez, además de ser conectora estratégica para el flujo de genes y especies que discurren por el corredor Iguaque – Guantiva - la Rusia.

Pero paradójicamente, allí pelagra el Peligro: Cemex, una transnacional cementera, pretende reactivar su extracción de caliza por treinta años más, a corta distancia de la Serranía, amenazando su integridad ambiental y comprometiendo la salud, bienestar, economía y cultura de las personas dependientes de este frágil ecosistema. La comunidad le apuesta a su protección, procurando que su riqueza natural sea preservada para esta y futuras generaciones. No es solo un tesoro ambiental; es un símbolo de la resiliencia y conexión profunda de los habitantes de la región con su entorno.

FIGURE 8. Text from the community that shows the concerns and evoke their love for the territory. Text is kept in Spanish acknowledging the commitment of the team to the community.

This species is also similar to *P. paquisha*, but it differs in the dorsal sepal oblong, 7.2–7.6 × 2.2–2.4 mm (*vs.* narrowly elliptic, 9.5–3.3 mm); the narrowly ovate, convex synsepal, with strongly revolute margins, 7.4–7.8 × 3.6–4.0 mm (*vs.* ovate, slightly convex, 9.4 × 5.6 mm); the lip lanceolate, 5.2–5.4 × 1.8–2.0 mm, verrucose-papillose (*vs.* oblong, acute, 6.2 × 2.7 mm, verrucose-spiculated) and the glenion oblanceolate (*vs.* oblong, slightly bilobed).

Likewise, *Pleurothallis moniquirensis* shared morphological traits with *P. applanata*, but the new species differs in having an oblong dorsal sepal, 7.2–7.6 × 2.2–2.4 mm (*vs.* narrowly elliptical-ovate, 10.0 × 3.6 mm); the narrowly ovate, convex synsepal, with strongly revolute margins, 7.4–7.8 × 3.6–4.0 mm (*vs.* ovate, slightly convex, 9.5 × 6.0 mm); the lip lanceolate, 5.2–5.4 × 1.8–2.0 mm, verrucose-papillose (*vs.* oblong-ovate, obtuse, 4.5 × 2.2 mm cellular-verrucose) and the oblanceolate glenion (*vs.* orbicular).

In our review, we found that Pedro Ortiz Valdivieso documented the new species in his drawing number 38 (Figure 6), deposited in the Herbarium of the Universidad Javeriana (HPUJ), where it was identified as *Pleurothallis undulata* Poepp. & Endl. However, in the original description of *P. undulata* by Eduard Friedrich Poeppig and Stephan Ladislaus

Endlicher, characteristics are mentioned that allow it to be distinguished from the new species. In *P. undulata*, the synsepal is described as cimbiform (curved, with the edges turned upwards like a boat), suggesting a strongly concave synsepal, while in *P. moniquirensis* the synsepal is convex, with strongly revolute margins. Additionally, the labellum of *P. undulata* is oblong, flat to concave, with an obtuse and bidentate apex, contrasting with the lanceolate, convex labellum with an acuminate apex in *P. moniquirensis*.

TABLE 1. Parameters of estimation used in conservation status. EOO (extend of occurrence), AOO (area of occurrence at 2 km²), habitat available (forest across sites), aggregate extraction polygon, and the remaining area. We calculated metrics based on a buffered area of 1 km from the EOO calculated to accommodate uncertainty in the potential appearance of new occurrences.

Parameter	Total area (km ²)	Area under influence (km ²)
EOO		55.41
AOO		28.10
Total area species range buffered		101.45
Habitat available	42.6	26.50
Aggregate extraction polygon	3.45	0.58
Remaining area		25.92

Acknowledgements

We would especially like to thank the community of Moniquirá in the Boyacá department for their continued efforts in protecting the forests where the species was found. Plants were collected under the joint permit between Instituto Alexander von Humboldt and the PARAMO project number 20192300064121. We are also grateful to the Herbarium of the Pontificia Universidad Javeriana (HPUJ) for kindly allowing us to use the illustration by Pedro Ortiz Valdivieso.

The discovery of this new species was the result of a collaborative effort between the scientific team and the local community, ensuring that the research process was inclusive and conservation oriented. To facilitate knowledge exchange, the scientific team led five community meetings, presenting the ecological significance of the species and its habitat, particularly in the context of severe threats from habitat loss, fragmentation, and mining activities. Through this engagement, the community actively contributed to conservation decisions, leading to a collective discussion on the most meaningful name for the species—one that reflects both its ecological importance and the community's role in its protection. The collaborative work ensured that local knowledge and conservation priorities were integrated into the scientific narrative. The selection of the species' name was not only a symbolic act but also a strategic one, designed to enhance awareness and advocacy for habitat protection.

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