

NOTA CORTA

## Range extensions for *Alopoglossus vallensis* (Squamata: Alopoglossidae) in the Central Andes of Colombia

### Extensiones de distribución de *Alopoglossus vallensis* (Squamata: Alopoglossidae) en los Andes Centrales de Colombia

Erika Lorena Benítez-Cubillos<sup>1</sup>, María F. Diago-Toro<sup>1</sup>, Yelenny López-Aguirre<sup>1</sup>, Fernando Vargas-Salinas<sup>1\*</sup>

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#### ABSTRACT

The lizard *Alopoglossus vallensis* (family Alopoglossidae) has been historically recorded in the Cauca River Valley and the western Andes (departments of Cauca and Valle del Cauca) of Colombia. Based on a review of specimens in biological collections, we report northern and southern range extensions for the species, including the first records from the departments of Antioquia, Caldas, Quindío, and Risaralda in the Central Andes of Colombia. These new records also expand the known elevational range and climatic tolerances of *A. vallensis*.

**Keywords:** Distribution, Gymnophthalmoidea, *Ptychoglossus*, shade lizards.

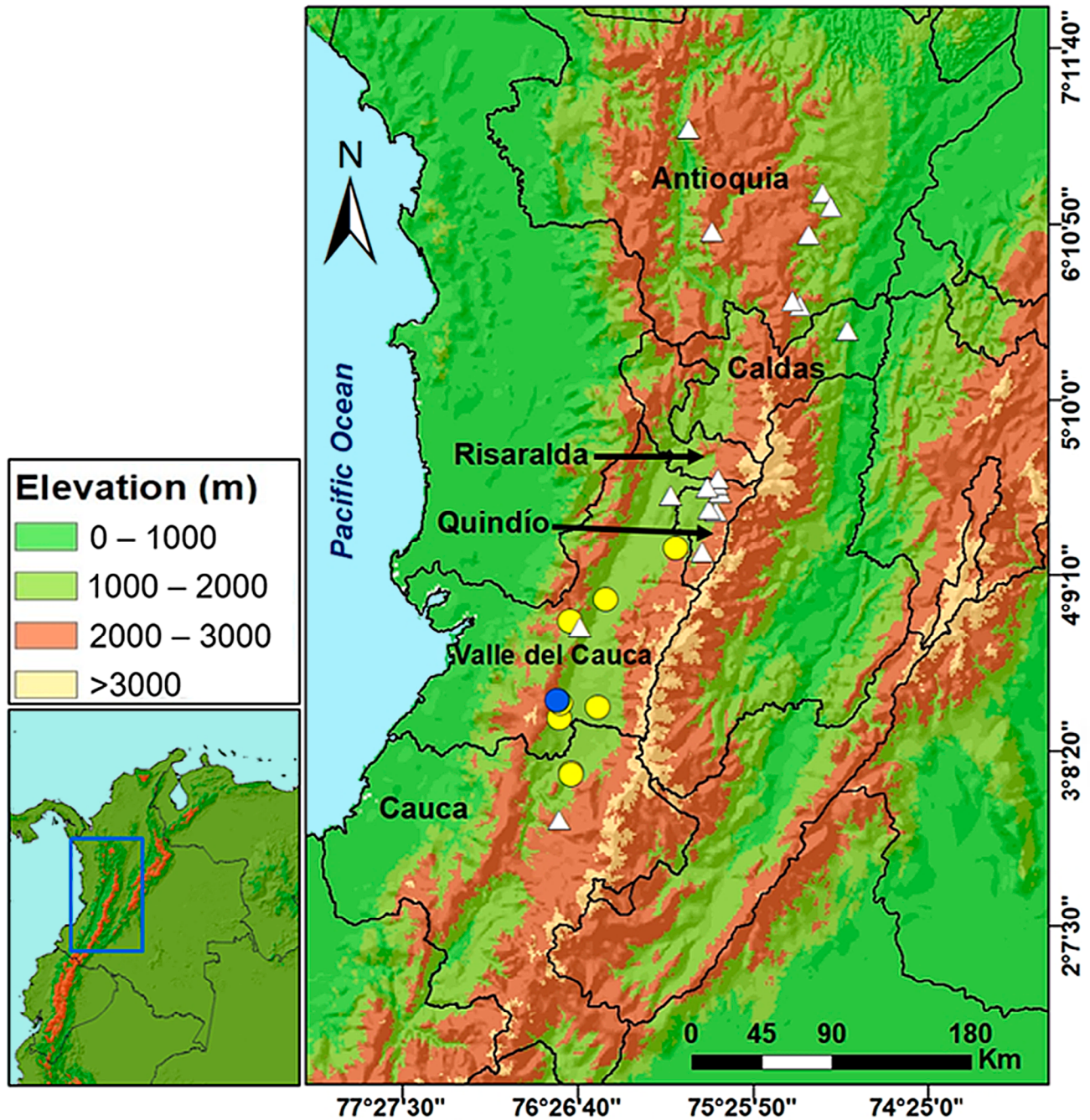
#### RESUMEN

El lagarto *Alopoglossus vallensis* (familia Alopoglossidae) ha sido históricamente registrado en el Valle del Río Cauca y la Cordillera Occidental de los Andes (departamentos de Cauca y Valle del Cauca) de Colombia. Con base en una revisión de especímenes en colecciones biológicas, reportamos una extensión de rango al Norte y Sur, incluyendo los primeros registros de los departamentos de Antioquia, Caldas, Quindío y Risaralda en la Cordillera Central de Colombia. Estos nuevos registros también amplían el rango altitudinal y las tolerancias climáticas conocidas de *A. vallensis*.

**Palabras clave:** Distribución, Gymnophthalmoidea, lagartijas de sombra, *Ptychoglossus*.

<sup>1</sup> Grupo de Investigación en Evolución, Ecología y Conservación (EECO), Programa de Biología, Universidad del Quindío, Armenia, Colombia, [lorena.benitez-cubillos@hotmail.com](mailto:lorena.benitez-cubillos@hotmail.com), [mfdiagotoro@gmail.com](mailto:mfdiagotoro@gmail.com), [yelennylopez19@gmail.com](mailto:yelennylopez19@gmail.com), [fvargas@uniquindio.edu.co](mailto:fvargas@uniquindio.edu.co)  
\* Corresponding author



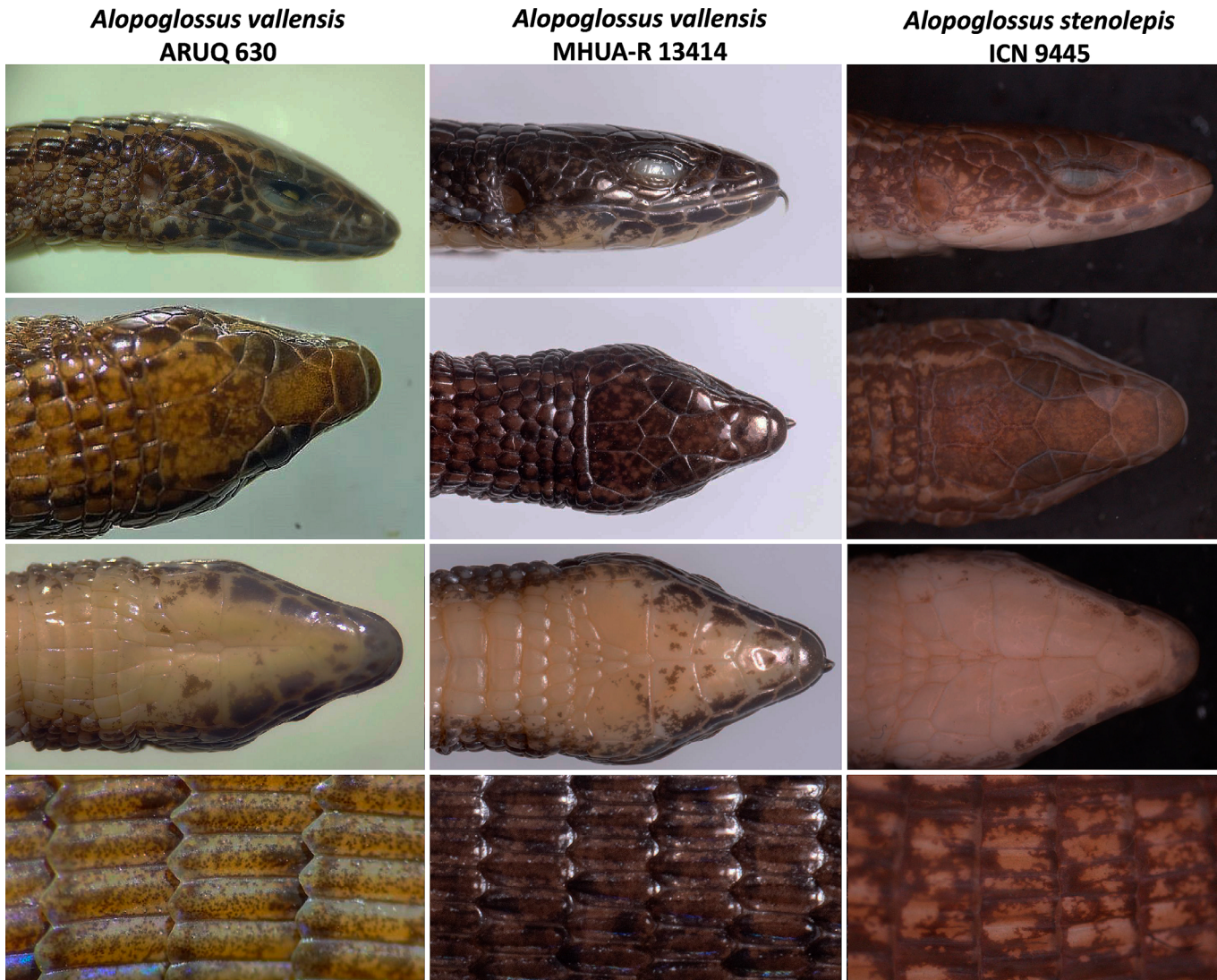


**Figure 1.** Geographic distribution of *Alopoglossus vallensis* in Colombia. The blue dot indicates the type locality (Río Pance, 2,5 km vía la Vorágine, Valle del Cauca, Colombia), the yellow dots indicate previously published localities in the departments of Cauca and Valle del Cauca (Harris 1994; Hernández *et al.* 2019, 2020), and the white triangles indicate localities in the departments of Antioquia, Caldas, Cauca, Quindío, Risaralda and Valle del Cauca based on previously unpublished museum specimens (see Appendix 1).

The Alopoglossidae is a Neotropical lizard family composed of 32 recognized species that are generally diurnal and cryptic inhabitants of leaf litter (Hernández-Morales *et al.* 2020; Ribeiro-Junior *et al.* 2021; Uetz *et al.* 2021). Many alopoglossid species were traditionally in the genus *Ptychoglossus* (e.g., Harris, 1994; Bolívar-G and Hernán-

dez-Morales 2013). However, a recent analysis of morphological and multilocus genetic data by Hernández-Morales *et al.* (2020) recommended that *Ptychoglossus* be synonymized with *Alopoglossus* due to paraphyly. We follow this taxonomic position herein while recognizing that it remains contested by some authors (e.g., Ribeiro-Junior





**Figure 2.** Morphological comparison of *Alopoglossus vallensis* and *A. stenolepis*. First row: lateral view of head (note straight vs. curved snout profile); second row: dorsal view of head (note separated prefrontal scales); third row: ventral view of head (note posterior chinshields similar in size to second pair vs. distinctly smaller than second pair); fourth row: dorsal scales of body (note hexagonal vs. quadrangular shape). See Appendix 1 for specimen locality data.

*et al.* 2021). *Alopoglossus vallensis* is one of these former *Ptychoglossus* species, and it is one of 21 alopoglossid species distributed in Colombia (Harris, 1994; Uetz *et al.* 2021). It has been recorded in the Cauca River Valley and the western Andes of Colombia (departments of Cauca and Valle del Cauca), in tropical dry forest and premontane humid forest from 1 000–1 700 m elevation (Harris, 1994; Castro-Herrera and Vargas-Salinas, 2008; Hernández-Morales *et al.* 2019). *Alopoglossus vallensis* differs from all Colombian congeners except *A. stenolepis* in having 36–45 scale rows around the midbody, widely separated prefrontal scales, a comparatively elongated body, and narrow dorsal scales (Harris, 1994). It differs from *A. steno-*

*lepis* in several features including hexagonal dorsal scales (vs. quadrangular scales in *A. stenolepis*), posterior chin shields that are similar in size to the second pair (vs. distinctly smaller than the second pair), a snout that slopes straight in lateral profile (vs. rounded), and hemipenes with 17 flounces (vs. eight) (Harris, 1994; Bolívar-G and Hernández-Morales, 2013).

In this note, we report both northern and southern range extensions for *A. vallensis* in Colombia, and we also expand its known elevational range and climatic tolerances. We assembled pre-existing records for the species by referencing relevant primary literature (Harris, 1994; Castro-Herrera and Vargas-Salinas, 2008; Hernández-Morales *et*

*al.* 2019), and we assembled new records through our own fieldwork and by examining previously unpublished specimens deposited in several Colombian collections (Appendix 1). In total, we identified 18 novel *A. vallensis* specimens collected from 18 localities across the departments of Antioquia (seven localities), Caldas (one locality), Cauca (one), Quindío (six), Risaralda (one), and Valle del Cauca (two) (Fig. 1, Appendix 1). Certain diagnostic features of two of the new *A. vallensis* specimens are shown in Fig. 2. Cumulatively, the new specimens are the first from the departments of Antioquia, Caldas, Quindío, and Risaralda, and extend the species' known elevational range from 1 000 - 1 700 m to 730 - 1 925 m (Fig. 1). Geographically, the new records extend the distribution of *A. vallensis* over 282 km northward (straight line measured in Google Earth) into the Central Andes of Colombia, and 29.8 km southward. The previous northernmost published record was from Parque Las Heliconias, Caicedonia, Valle del Cauca (CZPD-UV 3070, 3071, 3073, 3074, 3077, 3080; Hernández-Morales *et al.* 2019), while the new northernmost record is MHUA-R-10212 from Vereda Guacabe, Yolombó, Antioquia (Appendix 1). The previous southernmost published record was from Santander de Quilichao, Cauca (CZPD-UV 2034, 2051, 2269, 2274), while the new southernmost record is from Finca La Albania, Vereda Camilo Torres, Piendamó, Cauca (MHUA-R 13093). The annual mean range of temperature and precipitation for the 16 new localities (16.5–24.5 °C, 1 758 - 3 922 mm/year; data downloaded from *www.worldclim.org*) also expands the range of environmental conditions from those of the nine localities where *A. vallensis* was previously reported (19.0–24.0 °C, 1 160 –1 925 mm/year). Thus, our new records further broaden scientific understanding of the ecological tolerances of this species.

## AUTHOR'S CONTRIBUTION

ELBC and FVS conceived the study; ELBC, MFDT, and YLA collected data; all authors contributed to the writing of the manuscript.

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## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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## APPENDIX 1

Museum data for Colombian *Alopoglossus* specimens used in this study. Museum abbreviations are as follows: American Museum of Natural History (AMNH), Colección de Anfibios y Reptiles de la Universidad del Quindío (ARUQ), Colección Zoológica de Prácticas de Docencia de la Universidad del Valle (CZPD-UV), Colección de Herpetología del Instituto de Ciencias Naturales (ICN), Museo de Herpetología de la Universidad de Antioquia (MHUA-R), and University of Michigan Museum of Zoology (UMMZ).

*Alopoglossus vallensis*. **Antioquia:** Yolombó, Vereda Guacabe, Finca Normandía, Bosque Normandía, Porce II, 6°44'06.0" N, 75°04'50.9" W, 1150 m, MHUA-R 10212; Alejandria, Vereda San Antonio, El Edén, 6°21'59.9" N, 75°01'40.9" W, 1308 m, MHUA-R 12602; Granada, Bosque aledaño al Embalse Tafetanes, Central Hidroeléctrica Calderas, 6°07'34.8" N, 75°06'31.8" W, 1794 m, MHUA-R 13295; San Carlos, Embalse Calderas, 6°08'23.5" N, 75°04'00.5" W 1344 m, MHUA-R 13333; San Rafael, Vereda San Agustín, 6°19'51.2" N, 74°59'37.9" W, 1155 m, MHUA-R 13410; Argelia de María, Vereda San Luis, 5°41'41.8" N, 75°09'45.8" W, 1300 m, MHUA-R 13414; Argelia de María, Vereda San Pablo, 5°41'59.1" N, 75°10'35.7" W, 1700 m, MHUA-R 13415. **Caldas:** Norcasia, Hidroeléctrica La Miel I, Campamento Los Campos, 5°34'18.7" N, 74°53'22.3" W, 732 m, MHUA-R 12473. **Cauca:** Piendamó, Vereda Camilo Torres, Finca La Albania, 2°44'48.4" N, 76°33'08.3" W, 1534 m, MHUA-R 13093; Santander de Quilichao, 3°00'30"N 76°29'02"W, 1067 m, CZPD-UV 2034, 2051; Santander de Quilichao,

Vereda Carbonero 3°1'0" N, 76° 29' 0" W, 1134 m, CZPD-UV 2269, 2274, 3069, 3072. **Quindío:** Calarcá, Carrera 25 Calle 27, 4°31'26.8" N, 75°38'36.1" W, 1531 m, ARUQ 516; Calarcá, Finca La Carmelita, Vereda La Bella, 4°17'39.0" N, 75°43'26.0" W, 1315 m, ARUQ 630; Armenia, Estadio San José, 4°32'21.9" N, 75°41'04.7" W, 1471 m, ARUQ 528; Circasia, Conjunto Residencial de Casas Campestres La Aldea, 4°38'01.7" N, 75°37'19.2" W, ARUQ 659; Filandia, Finca El Placer, 4°39'43.2" N, 75°41'52.8" W, ARUQ 742; Filandia, Mirador, 4°40'45.3" N, 45°38'22.9" W, ARUQ 823. **Risaralda:** Pereira, Vereda El Manzano, Finca familia Hurtado Gómez, 4°42'49.4" N, 75°38'11.9" W, 1927 m, MHUA-R 13143. **Valle del Cauca:** Lago Calima, 3°53'30.0" N, 76°29'30.0" W, AMNH 119239; Candelaria Ingenio Mayagüez, 3°23'51.4" N, 76°19'41.0" W, UMMZ 171671; Bancos del Río Pance, 3°19'59.5" N, 76°33'04.4" W, UMMZ 171672; Cali, Barrio el Lido, estación Texaco, 3°25'10.9" N, 76°32'55.4" W, 1000 m, ICN 4204; Río Pance, 2.5 km vía la Vorágine, 3°26'0" N, 66°34'0" W, 1400 m, ICN 5649, ICN 5652 (holotype); Yotoco, km 18, Carretera Buga-Buenaventura, Reserva Forestal Yotoco, 3°51'27.9" N, 76°25'53.1" W, 1650 m, ICN 8266; Obando, Finca La Esmeralda, Inspección de Policía San José, 4°36'55.1" N, 75°54'31.0" W, 1530 m, MHUA-R 10284; Río Frío, Reserva Natural Liverpool, 4°01'14.0" N, 76°17'15.0" W , 947 m CZPD-UV 2143; Caicedonia, Parque de las Heliconias, 4°18'50.3" N, 75°52'44.0" W, 1201 m CZPD-UV 3070, 3071, 3073, 3074, 3077, 3080, 3081.

*Alopoglossus stenolepis*. **Quindío:** Filandia, Vereda El Roble, Bosque Bremen-La Popa, 2040 m, ICN 9445.