

SHORT COMMUNICATION

New data on occurrence, ecology, and color variation of *Pseudoeurycea jaguar* (Caudata: Plethodontidae), an endemic salamander from Mexico

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Keywords: Coloration, Elevation, Microhabitat, Scansorial habit, Vegetation.

Palabras claves: Coloración, Elevación, Hábito escansorial, Microhábitat, Vegetación.

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Pseudoeurycea jaguar Cázares-Hernández, Jimeno-Sevilla, Rovito, López-Luna, and Canseco-Márquez, 2022 is an endemic species of plethodontid salamander that occurs in Veracruz, Mexico. *Pseudoeurycea* is the most speciose genus (40 spp.) and Plethodontidae is the largest family (88% of salamander richness) present in the country (AmphibiaWeb 2023). Eleven species of *Pseudoeurycea* occur in the state of Veracruz (Torres-Hernández *et al.* 2021, Cázares-Hernández *et al.* 2022), where the type locality in the Sierra de Zongolica of *P. jaguar* is located. *Pseudoeurycea jaguar* is distinguished from other species occurring in Veracruz by its large size and the presence of irregular yellow mottled dorsal coloration on a dark brown, almost black, background that resembles the pattern of a jaguar (Cázares-Hernández *et al.* 2022).

I report here the occurrence of *P. jaguar* in two new localities in Mexico, which extend its

geographical distribution northward and its elevation at the lower and upper limits. I also report new data on the habitat, use of microhabitat, and color variation for adult specimens. The specimens were identified based on external morphological characters: body large and slender, head large and broad, limbs large, hands and feet broad with webbing extending to the middle of the penultimate phalanx on third toe of the foot, and presence of irregular yellow mottled dorsal coloration on a dark brown, almost black, background in most individuals (Cázares-Hernández *et al.* 2022). Eight individuals were photographed, and the photos were deposited in the digital collection of the Natural History Museum of Los Angeles County after verification by Dr. Sean Rovito, the taxonomic expert from the Center for Research and Advanced Studies of the National Polytechnic Institute.

I found nine *P. jaguar* individuals during occasional diurnal samplings in two localities in central Veracruz, Mexico, from 31 October 2020 to 21 July 2022 (Figure 1). These individuals

Received 28 February 2023
Accepted 12 June 2023
Distributed June 2023

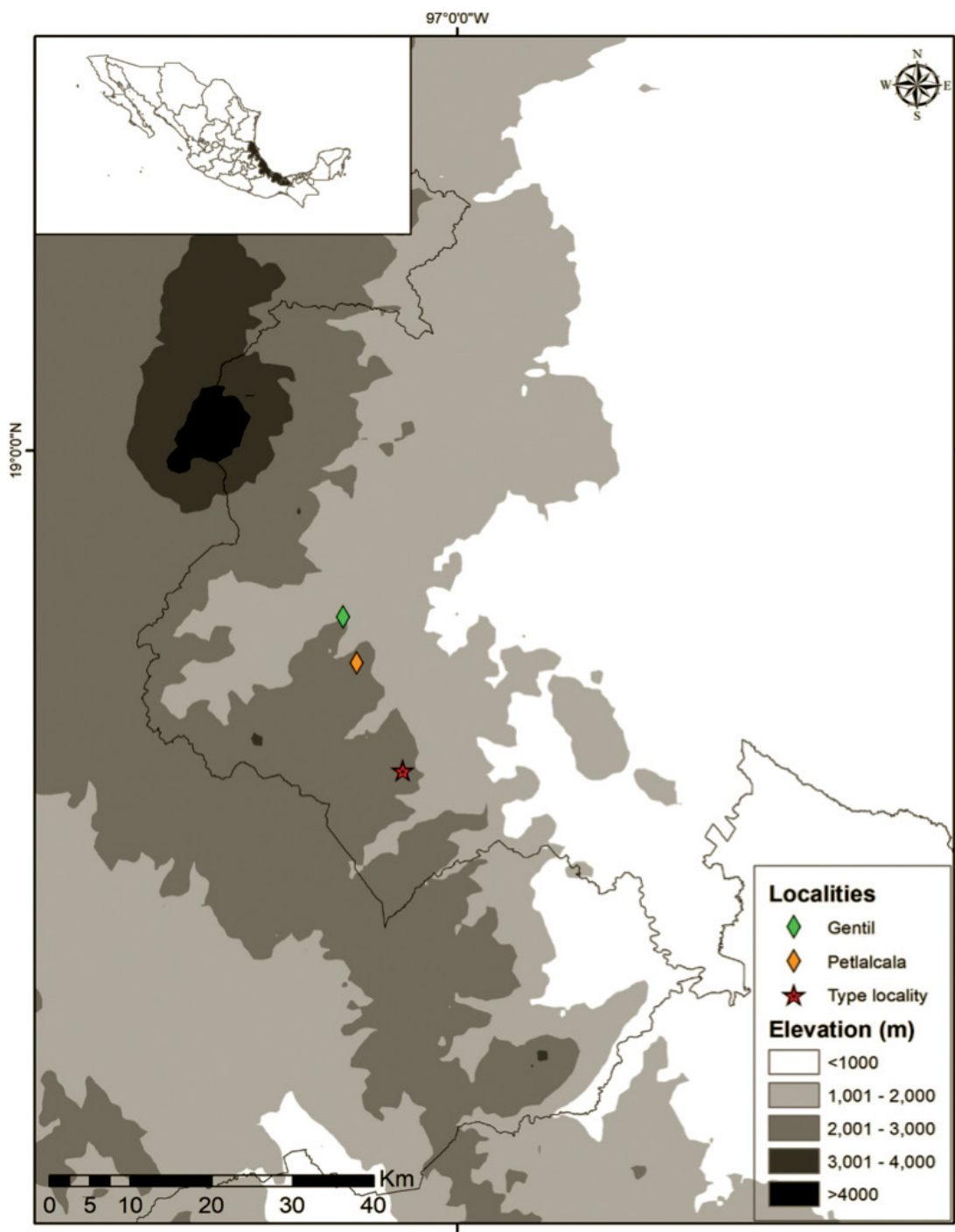


Figure 1. Map showing the type locality of *Pseudoeurycea jaguar* (star) and the two new localities reported here (diamonds).

were observed at elevations between 2181–2676 m a.s.l. in six types of microhabitats in three types of vegetation. Three individuals were found inside a cave (see details in Appendix I).


Cázares-Hernández and collaborators (2022) described the irregular yellow specks on a dark brown, almost black, background of *P. jaguar* as a distinctive characteristic. They noted ontogenetic variation in the coloration of the species because some of the smallest individuals lacked the yellow coloration on the back. Two individuals found in Cerro el Gentil (Figures 2B, 2F) also lacked the yellow color, and one of these was a large adult female (68 mm SVL, Figure 2B). The data indicate color variation among adults. They also noted that the trees at

the type locality had a large number of epiphytic bromeliads and that individuals were observed active at night in trees, bushes, rocks, herbaceous plants, moss, and directly on the ground. The salamanders also sheltered between and under the layers of moss that covered the tree trunks during the day. I found two individuals sheltered in bromeliads during the day and three active individuals inside a cave in Cerro el Gentil. This behavior has been observed in other plethodontid salamanders, including *Ixalotriton niger* (Wake and Johnson, 1989) (Luna-Reyes *et al.* 2015) and *Nyctanolis pernix* (Elias and Wake, 1983) (Barrio-Amorós *et al.* 2016). This behavior may be advantageous by allowing the salamanders to be active during the day.



Figure 2. Specimens of *Pseudoeurycea jaguar* observed in Cerro el Gentil (A–C, F–H) and Cerro Petlalcala (D–E).

Vegetation at the type locality of *P. jaguar* is coniferous forest located at 2360–2367 m a.s.l. The Cerro Petlalcala locality extends the known upper elevation by 309 m and reveals pine–oak forest as a new habitat type for the species. The new record at Cerro el Gentil extends the previously known lower elevation by 179 m and reveals a mountain cloud forest as a new habitat type for the species. Cerro Petlalcala is the closest locality to the type locality and is located 14.6 km northwest; Cerro el Gentil is located 20.6 km northwest of the type locality and 6 km from Cerro Petlalcala in the same direction (Figure 1).

Acknowledgments.—I thank Sean M. Rovito for verifying the identity of the specimens and Neftali Camacho for cataloging the photographs (Figure 2A–H) in the digital collection of Natural History Museum of Los Angeles County. 

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Editor: Vanessa K. Verdade

Appendix I. Individuals, data about the observation and catalogue number of the LACM PC digital collection.

Locality	Coordinates	Elevation (m a.s.l.)	Microhabitat	Vegetation type	Date	Activity	Specimen LACM PC
Cerro el Gentil	18°48'34.90" N 97°07'33.59° W	2181	Epiphytic bromeliad (2 m above ground)	Mountain cloud forest	Oct 2020	Sheltered	-
				Coniferous forest	Jan 2021	Active	2989 (Figure 2A)
				Coniferous forest	Mar 2021	Active	2999 (Figure 2B)
				Coniferous forest	Jul 2021	Sheltered	2990 (Figure 2C)
				Coniferous forest	Sep 2021	Active	2993 (Figure 2F)
				Coniferous forest	Jul 2022	Sheltered	2994 (Figure 2G)
Cerro Petalcala	18°48'24.11" N 97°07'50.12" W	2275	Wall of a cave (2 m from the entrance)	Coniferous forest	Jul 2022	Active	2995 (Figure 2H)
				Coniferous forest	Jul 2021	Sheltered	2991 (Figure 2D)
				Pine-oak forest	Aug 2021	Sheltered	2992 (Figure 2E)
				Pine-oak forest			