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Research note

New occurrence records of *Eleutherodactylus syristes* in Guerrero and Oaxaca, Mexico

Nuevos registros de distribución de *Eleutherodactylus syristes* en Guerrero y Oaxaca, México

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Abstract

The Sierra Madre del Sur (SMS) of southern Mexico is known for its exceptionally high levels of amphibian endemism, but knowledge of species' ranges in the region is incomplete. Here, we report new locality records for *Eleutherodactylus syristes* (Hoyt, 1965) from the states of Oaxaca and Guerrero. Previously, this species was known only from the Pacific slopes of the Sierra de Miahuatlán and Mixteca Alta in Oaxaca. These new occurrence records extend the known range of this species by approximately 335 km from the type locality and increase the elevational range, indicating it is more widespread in the SMS. *Eleutherodactylus syristes* is currently listed as endangered by the IUCN based on its limited distribution and ongoing threats to its persistence.

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Keywords: Anura; Geographic distribution; Sierra Madre del Sur; *Syrhophus*

Resumen

La sierra Madre del Sur en México es reconocida por su alto número de anfibios endémicos. Sin embargo, el conocimiento de la distribución de estas especies es incompleto. En este trabajo registramos localidades nuevas de *Eleutherodactylus syristes* (Hoyt, 1965) para los estados de Oaxaca y Guerrero. Esta especie era conocida solo para la vertiente del Pacífico de la sierra de Miahuatlán y para la Mixteca alta en Oaxaca. Los nuevos registros extienden la distribución conocida de esta especie a aproximadamente 335 km de la localidad tipo y aumentan su intervalo altitudinal, indicando que su distribución en la sierra Madre del Sur es más extendida. *Eleutherodactylus syristes* está considerada actualmente en peligro por la UICN con base en su limitada distribución geográfica y las amenazas actuales para su persistencia.

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Palabras clave: Anura; Distribución geográfica; Sierra Madre del Sur; *Syrhophus*

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Eleutherodactyline frogs of the subgenus *Syrrophus* are some of the most ubiquitous and abundant of Mexican amphibians, yet also among the least studied. These terrestrial, direct-developers occur at low to moderate elevations (up to 2500 m) from Texas through Mexico and into Guatemala and Belize, with 2 species in western Cuba (Hedges, Duellman, & Heinicke, 2008). Several species have been documented only from the type locality (IUCN, 2016). *Eleutherodactylus syristes* was described by Hoyt (1965) from 62.5 to 66.7 km (by road) N of Pochutla, Oaxaca, Mexico between 850 and 1620 m in elevation. Santos-Barrera and Canseco-Márquez (2004) reported this species from the Mixteca Alta in Oaxaca, but did not provide any additional information.

As part of ongoing revisionary work on this group, we conducted fieldwork throughout Mexico from 2007 to 2013, including several localities from Guerrero and Oaxaca in the Sierra Madre del Sur (SMS). This region is known for its exceptionally high levels of amphibian endemism (Campbell, 1999; Delia, Whitney, & Burkhardt, 2013; Flores-Villela, Canseco-Márquez, & Ochoa-Ochoa, 2010). A well-known locality that appears often in the literature on amphibians and reptiles inhabiting the SMS is Agua del Obispo, Guerrero (Campbell & Duellman, 2000; Davis & Dixon, 1955, 1964; Dixon, 1957; Lips, Mendelson, Muñoz-Alonso, Canseco-Márquez, & Mulcahy, 2004; Mendelson, Williams, Sheil, & Mulcahy, 2005; Taylor, 1940). Agua del Obispo represents the type locality for several

species, including *Eleutherodactylus albolabris* (Taylor, 1943). Located on the old Mexico City-Acapulco highway (MX95) approximately 31 km south of Chilpancingo, Agua del Obispo does not appear on maps because it is a small, private hacienda (Mendelson et al., 2005). Elevation is approximately 1000 m. Habitat there consists of scattered small pines and brush in an ecotone between tropical deciduous forest at lower elevations and pine-oak woodland at higher elevations (Campbell & Duellman, 2000).

On 9 September 2010, we visited Agua del Obispo in search of *E. albolabris*. A brief search yielded a single specimen of *Eleutherodactylus*, which could not be assigned to *E. albolabris*. The specimen was collected under some roofing tiles on the forest floor, and has been deposited in the Museo de Zoología, Facultad de Ciencias, Universidad Nacional Autónoma de México (MZFC 28683). This specimen fits the description of another specimen from Agua del Obispo deposited in the Texas Cooperative Wildlife Collection at Texas A&M University (TCWC 11261) collected by Ralph W. Axtell and reported by Davis and Dixon (1955). These authors tentatively assigned TCWC 11261 to *Tomodactylus nitidus petersi* (= *Eleutherodactylus nitidus*), but Dixon (1957) later assigned it to *T. albolabris* based on overall proportions and ventral color pattern. In his description of *T. syristes*, Hoyt (1965) discussed TCWC 11261, noting that this specimen resembled *T. syristes* more than *E. albolabris*. He suggested that it might be

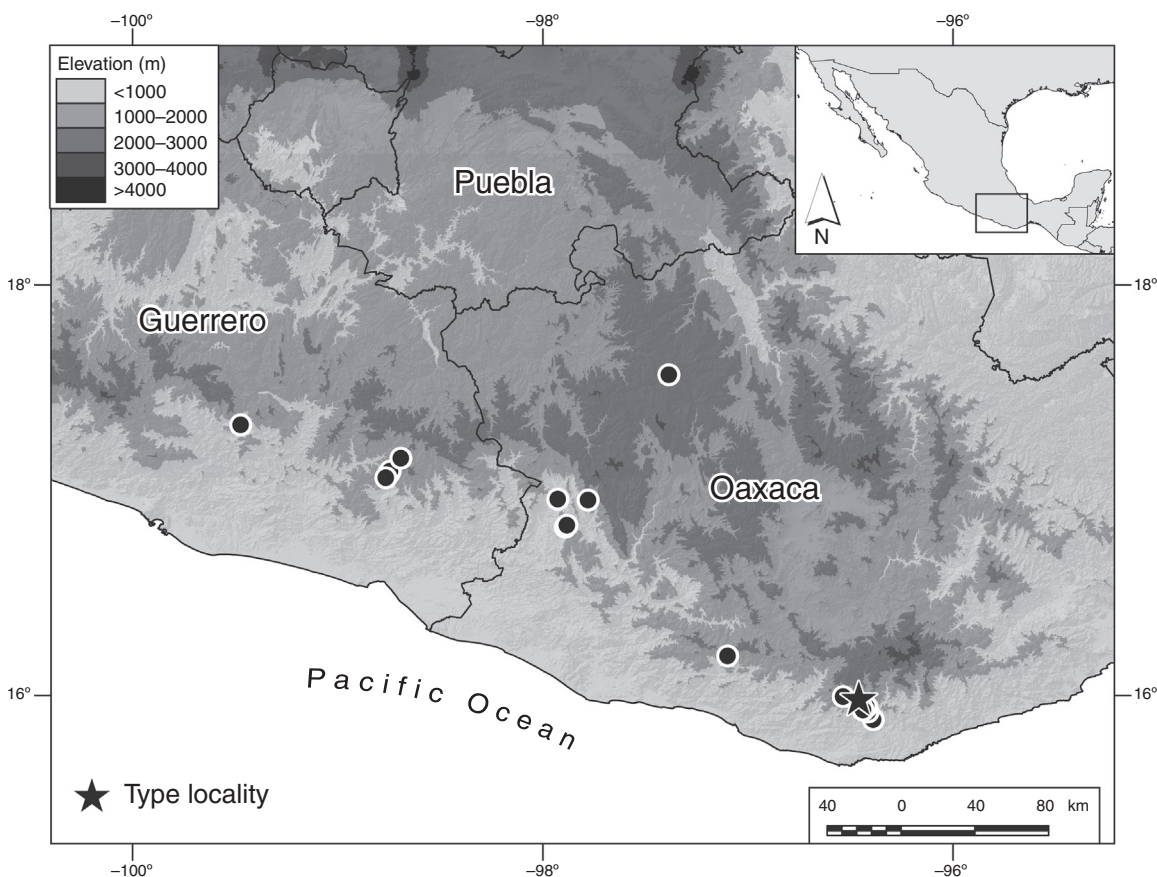


Figure 1. Known distribution of *Eleutherodactylus syristes*.



Figure 2. Photographs of *Eleutherodactylus syristes*. Photos of MZFC 28683, MZFC 21686, and ANMO 1992, and remaining specimens taken by TJD, UOGV, and Peter Heimes, respectively.

conspecific with *T. syristes*, but did not assign it to any named species.

We have examined TCWC 11261 and find that both this specimen and MZFC 28683 are assignable to *E. syristes*, which had not been recorded previously from the state of Guerrero (Pérez-Ramos, Saldaña, & Uribe-Peña, 2000). These specimens extend the known range of this species approximately 335 km to the northwest from the type locality in the Sierra de Miahuatlán (Hoyt, 1965). In addition to Agua del Obispo, we have recorded this species at 6 other geographically intermediate localities in Guerrero and Oaxaca (Fig. 1; Appendix). These records extend the known elevational range of this species to 2320 m.

All specimens exhibit the diagnostic characters described by Hoyt (1965), including tips of the outer 2 fingers slightly expanded and rounded; dorsum smooth; in life, dark gray with indistinct black mottling; venter with extensive black mottling; and nearly all of anterior, dorsal, and posterior surfaces of thighs bright orange (Fig. 2). Additional morphological and color

pattern characters that distinguish this species from congeners are provided by Hoyt (1965).

Currently, 7 of 24 species of mainland *Eleutherodactylus* (*Syrrophus*) are classified as endangered or critically endangered according to the IUCN Red List of Threatened Species criteria, including *E. syristes* (IUCN, 2016). Although the new distribution records presented here indicate that this species' range is more extensive in the SMS of Guerrero and Oaxaca, ongoing habitat loss and fragmentation throughout the SMS continue to threaten its persistence.

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Appendix. Specimens examined

Eleutherodactylus syristes.— México:

Guerrero (8): Chilpancingo de los Bravo: Agua del Obispo (TCWC 11261, MZFC 28683). Malinaltepec: Road San Luis Acatlán to Malinaltepec, between San Luis Acatlán and Tres Marías (MZFC 28679–82); Paraje Montero (MZFC 28676–78).

Oaxaca (21): Pluma Hidalgo: Finca Cruz Grande (MZFC 22506); Road to Jordán (MZFC 22555, 22609); Finca El Carmen (MZFC 22492); Río Copalita (MZFC 22525); Pluma Hidalgo (MZFC 22469, 22500–01). Putla Villa de Guerrero: Road between Putla and Pinotepa, 12.3 km S of Putla (MZFC 23938). San Agustín Loxicha: 24.5 km N of Candelaria Loxicha (MZFC 15856). San Andrés Cabecera Nueva: Guadalupe Zacatepec (MZFC 13390–91, 13395); Corral de Piedra, Santa Ana del Progreso (MZFC 13389, 13392–94). San Juan Lachao: Road between San Juan Lachao and Cerro de Vidrio, approx. 8.2 km S of turn-off to Santa Catarina Juquila (MZFC 21686–7). Santa Lucía Monte Verde: 1 km N la Pedrera (ANMO 1992). Santo Domingo Yanhuitan: Road Huajapan–Nochixtlán Km 68 (MZFC 21655).

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