

NEW LOCALITIES OF THE MORELET'S LEAF FROG (*AGALYCHNIS MORELETII*) FROM GUERRERO, MEXICO

NUEVAS LOCALIDADES DE LA RANA HOJA DE MORELET (*AGALYCHNIS MORELETII*) DE GUERRERO, MÉXICO

Enrique Vázquez-Arroyo¹, Rufino Santos-Bibiano², and Ricardo Palacios-Aguilar^{3,4*}

¹Laboratorio Integral de Fauna Silvestre, Facultad de Ciencias Químico-Biológicas, Universidad Autónoma de Guerrero, C. P. 39087, Av. Lázaro Cárdenas S/N, La Haciendita, Chilpancingo de los Bravo, Guerrero (e-mail: EnriqueVazquezArroyo@hotmail.com.)

²Laboratorio de Herpetología II, Departamento de Zoología, Instituto de Biología, Universidad Nacional Autónoma de México, A. P. 70515, 04510 Coyoacán, Ciudad de México, México (e-mail: rufino.santos@yahoo.com.mx).

³Museo de Zoología "Alfonso L. Herrera", Facultad de Ciencias, Universidad Nacional Autónoma de México. A. P. 70399, 04510, Coyoacán, Ciudad de México, Mexico (e-mail: ricardopalaciosaguilar@gmail.com).

⁴Totlok A. C., C. P. 04350, Delegación Coyoacán, Ciudad de México, México.

*Correspondence: ricardopalaciosaguilar@gmail.com

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The Morelet's Leaf Frog (*Agalychnis moreletii*) is a moderate-sized species of tree frog, attaining 65.7 mm in males, 82.9 mm in females, and diagnosed from other species of the genus by having three-fourths of the hands and feet webbed, uniformly orange flanks and thighs, and a black eye (Duellman, 1970). The species is currently known from the Mexican state of Puebla southwards to Guatemala and Belize on the Atlantic versant and from Guerrero, Mexico southwards to El Salvador on the Pacific versant in an elevational range of 500–2130 m (Canseco-Márquez et al., 2000; Campbell, 1988; Duellman, 1970). Although some records of the species have been recently reported on the Pacific versant of Oaxaca (Vázquez-Vega et al., 2015), few localities are known to date on the adjacent state of Guerrero, most of them from the mid-elevations of the Sierra de Atoyac in the surroundings of the town of San Andrés de la Cruz (Duellman, 1970).

Here we report four additional localities of this frog in Guerrero, including the westernmost locality range-wide based on our own field work conducted between 2010 and 2019. Voucher specimens were consulted at the Museo de Zoología "Alfonso L. Herrera", Facultad de Ciencias (MZFC), and the Colección Nacional de Anfibios y Reptiles (CNAR) from Universidad Nacional Autónoma de México, and photographic vouchers were deposited at the digital collection of the former institution (MZFC-IMG). All specimens and photographs were obtained by EV-A.

In the Municipality of Acapulco de Juárez, 2.24 km E La Concepción (16.87897° N, 99.67267° W), 38 m a.s.l., on 19

September 2015, an inactive male (MZFC-IMG 55; Fig. 1A) was found hidden among the leaves of a plant, the habitat was dominated by riparian vegetation. This record extends the known distribution of the species 79.54 km ESE from the nearest records in the Sierra de Atoyac.

In the Municipality of Petatlán, 3.5 km de Colonia Juárez (17.59169° N, 101.15621° W), 986 m a.s.l., on 17 June 2010, an inactive female (MZFC-IMG 53) was found during the day in a mixture of cloud forest and tropical semideciduous forest. This record extends the known distribution of the species 98.67 km WNW from the nearest records in the Sierra de Atoyac (Fig. 1B) and represents the westernmost record in the entire range.

In the Municipality of Chilpancingo de los Bravo, 4.15 km SE Tlahuizapa (17.27811° N, 99.56974° W), 574 m a.s.l., on 5 August 2014, a calling male (MZFC-IMG 54; Fig. 1C) found during night in tropical semideciduous forest. This record extends the known distribution of the species 75.56 km E from the nearest records in the Sierra de Atoyac.

In the Municipality of Coyuca de Benítez, 3.21 km SW Santa Rosa de Lima (17.20828° N, 99.88194° W), 936 m a.s.l., on 7 July 2016, an inactive female (MZFC-IMG 56; Fig. 1D) found at night in gallery forest surrounded by tropical semideciduous forest. This record extends the known distribution of the species 43.51 km E from the nearest records in the Sierra de Atoyac.

The new records reported herein help to link a distributional gap of over 370 km between the localities reported previously

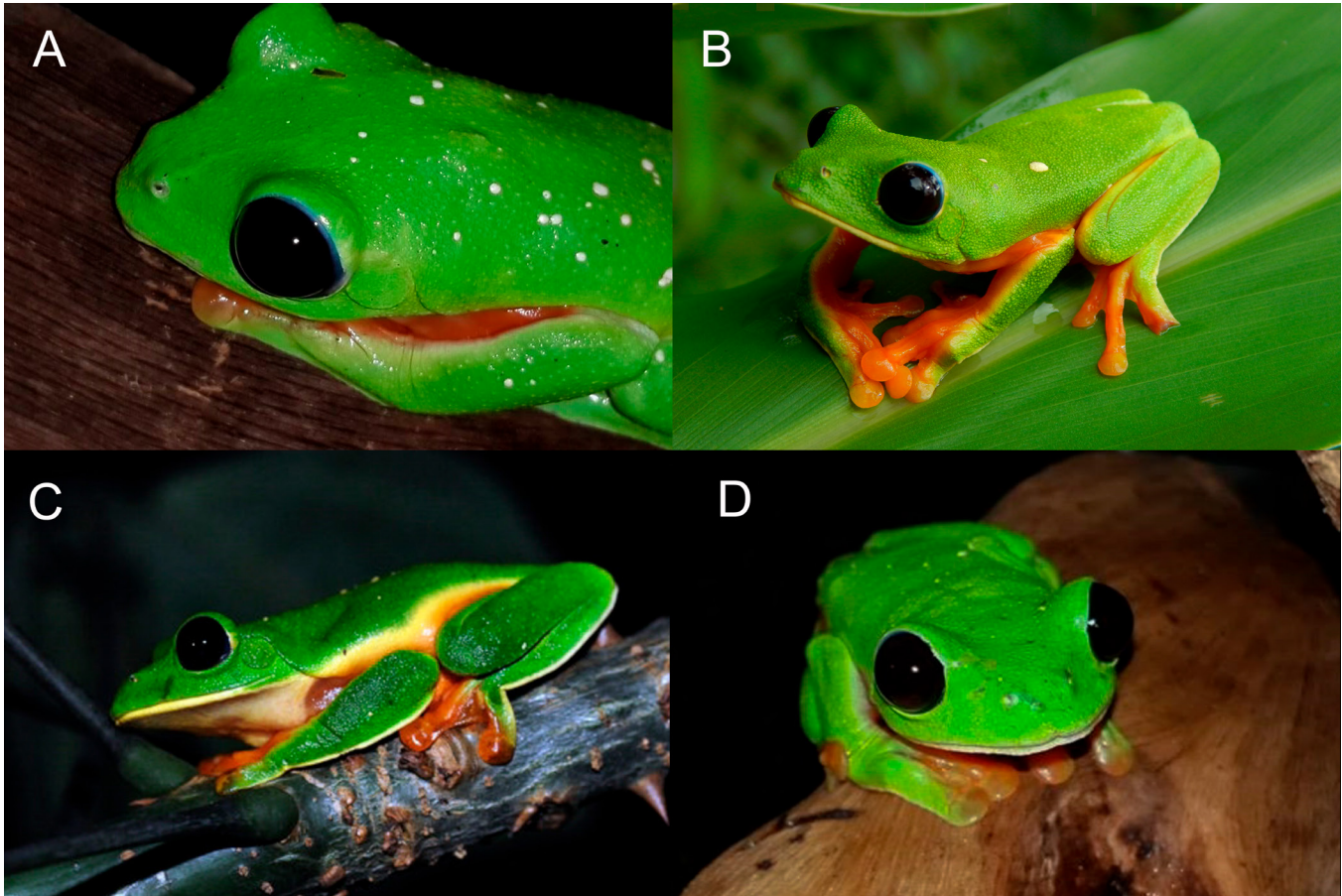


Figura 1. Ejemplares de *Agalychnis moreletii* de Guerrero, México. Los ejemplares son de los municipios de A) Acapulco de Juárez, B) Atoyac de Álvarez, C) Chilpancingo de los Bravo y D) Coyuca de Benítez. Consulte el texto y el Apéndice 1 para obtener información sobre las localidades. Todas las fotografías tomadas por EV-A.

Figure 1. Specimens of *Agalychnis moreletii* from Guerrero, Mexico. The specimens are from the municipalities of A) Acapulco de Juárez, B) Atoyac de Álvarez, C) Chilpancingo de los Bravo, and D) Coyuca de Benítez. See text and Appendix 1 for information on the localities. All photographs taken by EV-A.

from the Sierra de Atoyac, Guerrero, and those from the surroundings of San Gabriel Mixtepec, Oaxaca (Duellman, 1970; Fig. 2). It is likely that the species is distributed along the mid-elevations of the Sierra Madre del Sur in Guerrero and Oaxaca, but this region has been historically under sampled and new species and range extensions continue to be reported therein (see discussion in Arrazola-Bohórquez & Palacios-Aguilar, 2022). It is possible that *A. moreletii* is also found farther northwest to our record of Petatlán, as suitable habitat exists as far as the Sierra de Santiago in the municipality of Zihuatanejo de Azueta (personal observations).

However, we consider it unlikely that the species is distributed in other parts of the Sierra Madre del Sur such as the Sierra de Coalcomán in Michoacán due to the loss of habitat continuity by

the dry and xeric conditions of the Depresión del Balsas, which has been reported to be an important barrier for several species of amphibians and reptiles in this part of the country (Duellman, 1965).

The lowest elevation for the species is herein recorded as 38 m a.s.l., compared to 500 m reported on other published sources. The elevation range of the species in Guerrero was reported as 939–2050 m by Palacios-Aguilar and Flores-Villela (2018) based on the revision of literature and scientific collections databases. The higher elevation of the species in that work was based on a specimen collected by Kraig Adler, David M. Dennis and David H. Snyder on 22 December 1969, deposited at the University of Texas at Arlington (UTA A-56443) with locality data as “WNW of Chilpancingo, 8.5 road km S Puerto

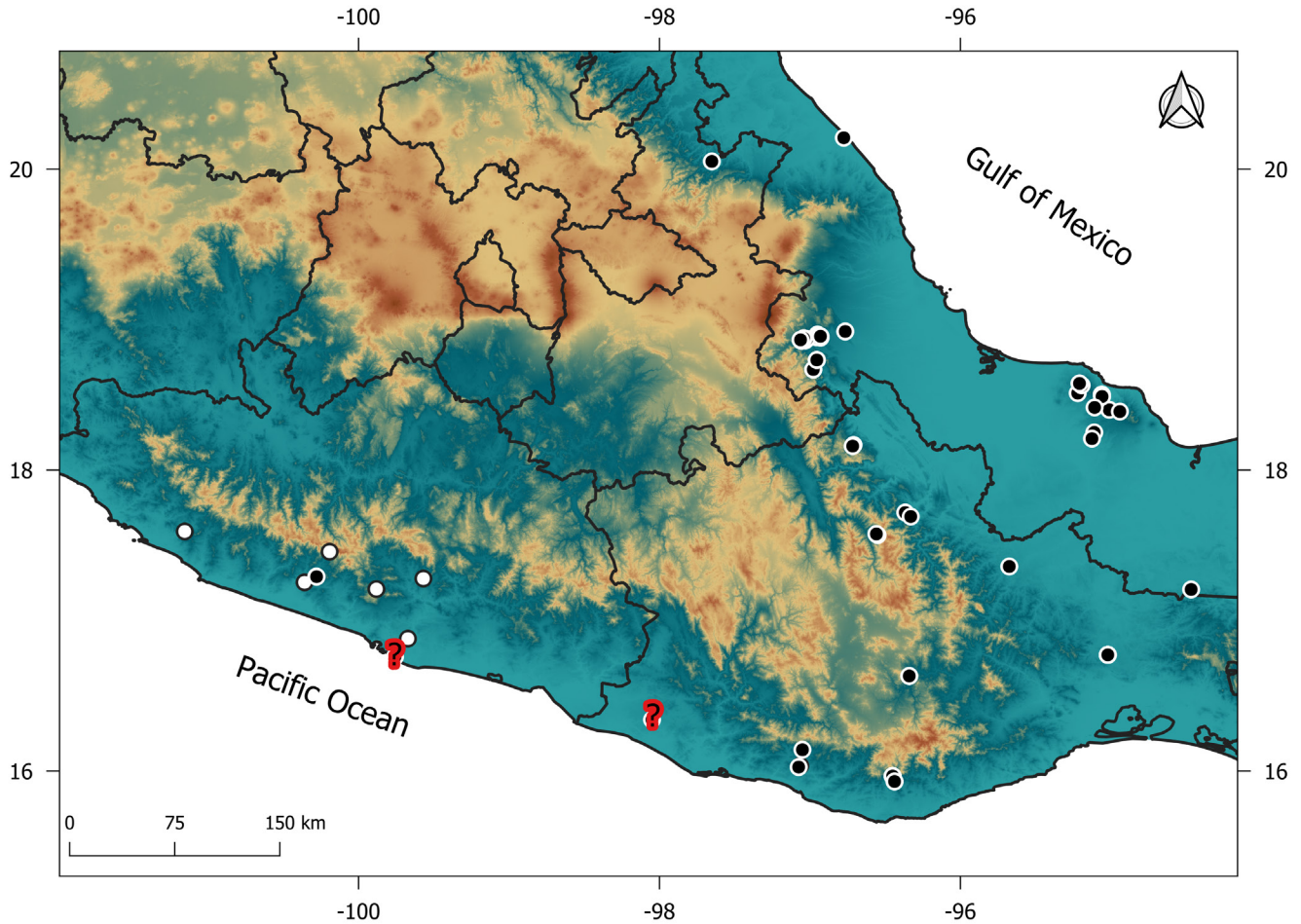


Figura 2. Distribución de *Agalychnis moreletii* en la parte occidental de su área. Los círculos negros representan localidades previamente conocidas y los círculos blancos las que se informan aquí, los signos de interrogación (?) denotan registros de localidades no verificadas. Consulte el texto y el Apéndice 1 para obtener información sobre las localidades.

Figure 2. Distribution of *Agalychnis moreletii* on the western portion of its range. Black circles represent previously known localities and white circles those reported herein, question marks (?) denote unverified locality records. See text and Appendix 1 for information on the localities.

Gallo (17.45661°N, 100.192947°W), 2050m". However, when preparing this note we asked for a revision of the associated data of that specimen in the collection where it was deposited and corroborated that the correct locality information was "0.8 km SE San Andrés de La Cruz (17.25556°N, 100.35138°W), 750 m". Hence, the elevation range of the species in Guerrero is 38–986 m based on the new information presented herein and 38–2130 m for the species overall range.

An additional vouchered specimen from Barra Vieja, municipality of Acapulco de Juárez is deposited at the MZFC according to its database (MZFC 1663) but could not be located, and a specimen from the Colección Nacional de Anfibios y

Reptiles (CNAR 7391) from Santiago Pinotepa Nacional, Oaxaca is reported in its database but was not examined by us (Figure 2). Given the new localities reported it is likely that these localities are accurate, and that the species may have been present at them but recently extirpated. However, it cannot be ruled out that these are misidentification with the similar looking species *Agalychnis dacnicolor* that is common along the Pacific Coastal Plain.

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LITERATURE CITED

- Arrazola-Bohórquez, R. & R. Palacios-Aguilar. 2022. First verified record of *Thamnophis validus* (Squamata: Natricidae) from Oaxaca, Mexico. *Revista Latinoamericana de Herpetología* 5:109-111.
- Campbell, J.A. 1998. Amphibians and Reptiles of Northern Guatemala, the Yucatan, and Belize. Animal Natural History Series. Norman, Oklahoma: University of Oklahoma Press.
- Canseco-Márquez, L., M.G. Gutiérrez-Mayén & J. Salazar-Arenas. 2000. New records and range extensions for amphibians and reptiles from Puebla, Mexico. *Herpetological Review* 31:259-263.
- Duellman, W.E. 1965. A biogeographic account of the herpetofauna of Michoacan, Mexico. *University of Kansas Vol.* 15:627-709.
- Duellman, W.E. 1970. The hylid frogs of Middle America. 2 volumes. Monograph. Museum of Natural History, University of Kansas:1-753.
- Palacios-Aguilar, R. & O. Flores-Villela. 2018. An updated checklist of the herpetofauna from Guerrero, Mexico. *Zootaxa* 4422:1-24.
- Vázquez-Vega, L., I.W. Cavides-Solís, I. Solano-Zavaleta, R. Villegas-Garcías & O. Flores-Villela. 2015. Distribution Notes: *Agalychnis moreletii* (Duméril, 1853). *Mesoamerican Herpetology* 2:538-539.



APPENDIX 1 / APÉNDICE 1

Localities from Guerrero, Mexico plotted on Figure 2. Those marked with * represent new localities reported herein. Information was obtained from our personal fieldwork and revision of vouchered specimens, and scientific collections catalogues.

Localidades de Guerrero, México trazadas en la Figura 2. Las marcadas con * representan nuevas localidades reportadas aquí. La información se obtuvo de nuestro trabajo de campo personal y revisión de especímenes registrados y catálogos de colecciones científicas.

Specimen	Municipality	Locality	Latitude	Longitude	Elevation
UTA A-56443	Atoyac de Álvarez	0.8 km SE San Andrés de La Cruz	17.25556	-100.35138	750
MZFC-IMG 53*	Petatlán	3.5 km de Colonia Juárez	17.59169	-101.15621	986
MZFC-IMG 54*	Chilpancingo de los Bravo	4.15 km SE Tlahuizapa	17.27811	-99.56974	574
MZFC-IMG 55*	Acapulco de Juárez	2.24 km E La Concepción	16.87897	-99.67267	38
MZFC-IMG 56*	Coyuca de Benítez	3.21 km SW Santa Rosa de Lima	17.20828	-99.88194	936
MZFC-IMG 57	Atoyac de Álvarez	0.57 SO San Andres de la Cruz	17.25313	-100.35964	730
MZFC-HE 34450	Atoyac de Álvarez	San Andrés de la Cruz	17.24943	-100.36639	529
MZFC-HE 19378	Atoyac de Álvarez	San Vicente de Benítez	17.29061	-100.27955	950
MZFC-HE 34937-945	Atoyac de Álvarez	El Paraiso	17.3504	-100.21505	822
MZFC-HE 34979	Atoyac de Álvarez	Río Santiago, cerca del Panteón	17.25069	-100.32047	679