 https://doi.org/10.22201/fc.25942158e.2022.1.395

FIRST VERIFIED RECORD OF *THAMNOPHIS VALIDUS* (SQUAMATA: NATRICIDAE) FROM OAXACA, MEXICO

PRIMER REGISTRO VERIFICADO DE *THAMNOPHIS VALIDUS* (SQUAMATA: NATRICIDAE) DE OAXACA, MÉXICO

Rodrigo Arrazola-Bohórquez[1] & Ricardo Palacios-Aguilar[2, 3]

[1]*Universidad del Mar campus Huatulco, Carretera Federal Km 250, Bahías de Huatulco, CP 70989, Santa María Huatulco, Oaxaca, México.*

[2]*Museo de Zoología "Alfonso L. Herrera", Facultad de Ciencias, Universidad Nacional Autónoma de México A.P. 70-399, México D.F. CP 04510, México.*

[3]*Instituto para el Manejo y Conservación de la Biodiversidad A. C. Calle Durango 23, Colonia José Vasconcelos, C. P. 39047, Chilpancingo de los Bravo, Guerrero, México.*

**Correspondence: ricardopalaciosaguilar@gmail.com*

Received: 2021-12-23. **Accepted**: 2022-01-30. **Published:** 2022-02-10

Editor: César Antonio Ríos-Muñoz, México.

The West Coast Garter Snake (*Thamnophis validus*) is a Mexican endemic, semi-aquatic snake that is distributed along the Pacific coastal plains from Chihuahua and Sonora to Guerrero, with an isolated population in the Cape region of Baja California Sur (Conant, 1969; Rossman et al., 1996; Lemos-Espinal et al., 2002; Heimes, 2016). A total of four subspecies have been historically recognized within this taxon, which are mainly diagnosed on the basis of dorsal coloration pattern. These populations include *T. v. valida*, found from the Rio Yaqui southwards to the Marismas Nacionales in Nayarit: *T. v. isabellae*, recognized from Jalisco to Guerrero; *T. v. thamnophisoides* from the uplands surrounding Tepic, Nayarit; and the isolated population in Baja California Sur known as *T. v. celaeno*. However, broad zones of intergradation between these populations have been identified (Conant, 1969; Rossman et al., 1996). *Thamnophis validus* inhabits floodplains at the mouths of rivers that flow into the Pacific, as well as attenuated lagoons along the coastline (Rossman et al., 1996). According to Conant (1969) this species likely inhabits every permanent body of freshwater along the coastal plain and occasionally enters the zones of brackish water, at least seasonally. Herein, we provide the first verified record of the species for the state of Oaxaca, Mexico, and the southernmost record for the species. An adult specimen of *Thamnophis validus* (Fig. 1) was salvaged after being killed by tourists near the lagoon of La Ventanilla, Santa María

Figura 1. Ejemplar adulto de *Thamnophis validus* (UTADC 9740) de La Ventanilla, Santa María Tonameca, Oaxaca, México.

Figure 1. Adult specimen of *Thamnophis validus* (UTADC 9740) from La Ventanilla, Santa María Tonameca, Oaxaca, Mexico.

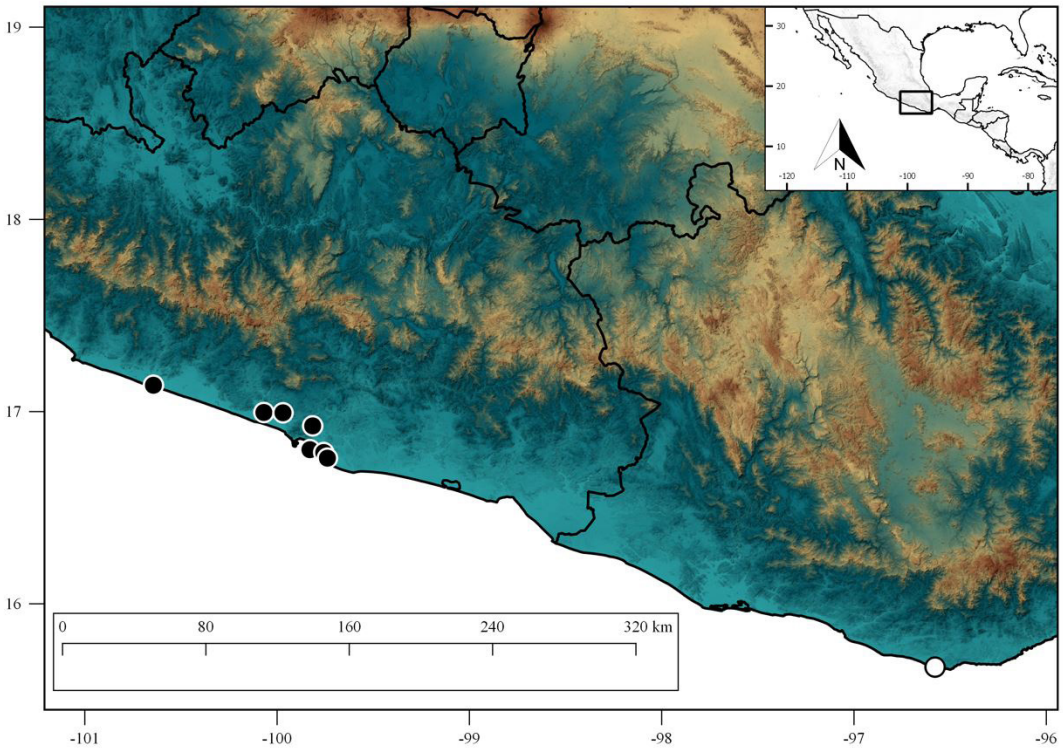

Figure 2. Distribution of *Thamnophis validus* at the southern portion of its range. Black symbols correspond to previous records and the white symbol to the new record reported herein. See Appendix 1 for information regarding the localities plotted on the map.

Figura 2. Distribución de *Thamnophis validus* en la parte sur de su área de distribución. Los símbolos negros corresponden a registros anteriores y el símbolo blanco al nuevo registro reportado aquí. Consulte el Apéndice 1 para obtener información sobre las localidades trazadas en el mapa.

Tonameca, Oaxaca, Mexico (15.6711° N, 96.5788° W, WGS84) on 13 December 2019, ca. at 10 h. The lagoon is a natural fresh water body of about 3.2 km in length, parallel to the coast and surrounded by mangrove and tropical deciduous forest. The specimen was held by the members of the local cooperative, stored in alcohol and used for educational talks. We were unable to measure the specimen or take scale counts due to the lack of appropriate equipment. We deposited a digital photograph of this specimen in The University of Texas at Arlington, Collection of Vertebrates Digital Collection (UTADC 9740). The specimen identification was corroborated by Rufino Santos Bibiano. This specimen represents the first verified record of the species in the state of Oaxaca, extending its known distribution ca. 360 km ESE from the closest published records near Acapulco City airport, Guerrero (Conant, 1969; Fig. 2; Appendix 1), at the southern margins of Laguna de Tres Palos. The occurrence of this species in the state had been considered as plausible by Mata-Silva et al. (2021) on the basis of "unpublished observations in the southwestern section of the Pacific Coastal Plains (= PCP) physiographic region, in the Costa Chica." It is very likely that the species is widely distributed along the many coastal lagoons present in the PCP between Guerrero and Oaxaca as inferred from the habitat characterization in Conant (1969).

Few herpetological reports have been made on specimens obtained in PCP between Acapulco, Guerrero and the Isthmus of Tehuantepec in Oaxaca. Among those that discussed on material obtained in this region are Holman (1964), Liner and Dundee (1969), scattered recollections product of the partially published undergraduate thesis of Saldaña de La Riva and Pérez Ramos (1987), and a book regarding the snake fauna of southern Oaxaca published by Schätti and Stutz (2016). However, in recent decades some rare or poorly known snake species have been reported along PCP, such as *Tantilla sertula* (Canseco-Márquez et al., 2007, Rocha et al., 2016), *Leptodeira uribei* (Siria-Hernández et al., 2006), and *Tropidodipsas sartorii* (Blancas-Hernández et al., 2019), sometimes hundreds of kilometers from their type localities or their formerly restricted ranges. Evidence of these new records, as well as the one reported herein, apparently suggest that PCP acts as a corridor to the fauna distributed therein (as proposed by Flores-Villela & Goyenechea, 2001). Consequently, increasing sampling in the least explored regions may reveal new populations of poorly known taxa or even undescribed species given the high endemism level of the province (Johnson et al., 2017)

Acknowledgements.– We thank Gregory G. Pandelis for providing the UTADC catalog accession number, and Rufino Santos Bibiano for confirming the species identity. Vicente Mata Silva and another anonymous reviewer provided helpful suggestions that improved the quality of this contribution.

SUPPLEMENTARY INFORMATION

Appendix I. Localities plotted in Figure 2. All localities within Mexico, acronyms used correspond to American Museum of Natural History (AMNH), Colección Nacional de Anfibios y Reptiles, UNAM (CNAR), Museo de Zoología "Alfonso L. Herrera", Facultad de Ciencias, UNAM (MZFC), Museum of Vertebrate Zoology, Berkeley (MVZ), University of Illinois, Museum of Natural History (UIMNH), University of Michigan, Museum of Zoology (UMMZ), and UTADC (see text).

OAXACA: La Ventanilla, Santa María Tonameca, 15.6711° N, 96.5788° W (UTADC 9740). GUERRERO: El Limoncito, 16.92591° N, 99.81512°W (UIMNH 18659); Pantano cercano a Puerto Marquéz, 16.80222° N, 99.82928° W (CNAR 2233); Viveros El Huayacan, La Poza, 16.7875° N, 99.7575° W (CNAR 2977); Near Acapulco airport 16.75793° N, 99.73839° W (MVZ 78753); 7 miles east Coyuca de Benitez, 16.99556°N, 100.06895° W (UMMZ 1194201); Pie de la Cuesta, Laguna Coyuca, 16.993989° N, 99.969395° W (AMNH 73171); Tecpan de Galeana, Playa Boca Bonita, 17.13725° N, 100.64306° W (MZFC 23882).

CITED LITERATURE

Blancas-Hernández, J.C., R. Palacios-Aguilar & R. Santos-Bibiano. 2019. *Tropidodipsas sartorii* (Squamata: Dipsadidae), an addition to the snake fauna of Guerrero, Mexico. Herpetozoa 32:91-93.

Canseco-Márquez, L., E.N. Smith, P. Ponce-Campos, O. Flores-Villela, & J.A. Campbell. 2007. A new species of *Tantilla* (Squamata: Colubridae) of the *calamarina* group from Volcán Ceboruco, Nayarit, Mexico. Journal of Herpetology 41:220-224.

Conant, R. 1969. A review of the water snakes of the genus *Natrix* in Mexico. Bulletin of the American Museum of Natural History 142:1-140 + 22 plates.

Flores-Villela, O. & I. Goyenechea. 2001. A comparison of hypotheses of historical area relationships for Mexico and Central America, or in search for the lost pattern. Pp. 171-181. En: J. Johnson, R.G. Webb, & O. Flores-Villela (Eds.). Mesoamerican Herpetology: Systematics, Zoogeography, and Conservation. Centennial Museum, Special Publication, University of Texas, El Paso, Texas, USA.

Heimes, P. 2016. Herpetofauna Mexicana Vol. 1: Snakes of Mexico. Chimaira, Frankfurt, Germany.

Holman, J.A. 1964. New and interesting amphibians and reptiles from Guerrero, and Oaxaca, Mexico. Herpetologica 20:48-54.

Johnson, J.D., L.D. Wilson, V. Mata-Silva, E. García-Padilla & D.L. DeSantis. 2017. The endemic herpetofauna of Mexico: organisms of global significance in severe peril. Mesoamerican Herpetology 4:544-620.

Lemos-Espinal, J.A., D.L. Auth, D. Chiszar & H.M. Smith. 2002. Geographic distribution: *Thamnophis validus* (Pacific Gartersnake). Herpetological Review 33:325-326.

Liner, E.A. & H.A. Dundee. 1969. Notes on the reptiles and amphibians of southern Guerrero and Oaxaca, Mexico. The Southwestern Naturalist 14:129-134.

Mata-Silva, V., E. García-Padilla, A. Rocha, D.L. DeSantis, J.D. Johnson, A. Ramírez-Bautista & L.D. Wilson. 2021. A reexamination of the herpetofauna of Oaxaca, Mexico: composition update, physiographic distribution, and conservation commentary. Zootaxa 4996:201-252.

Rocha, A., V. Mata-Silva, E. García-Padilla, D.L. DeSantis & L.D. Wilson. 2016. Third known specimen and first locality record in Oaxaca, Mexico, for *Tantilla sertula* Wilson and Campbell, 2000 (Squamata: Colubridae). Mesoamerican Herpetology 3:771-774.

Rossman, D. A., N.B. Ford & R.A. Seigel. 1996. The Garter Snakes: Evolution and Ecology. University of Oklahoma Press, Norman, Oklahoma, USA.

Saldaña De La Riva, L. & E. Pérez Ramos, E. 1987. Herpetofauna del estado de Guerrero, México. Tesis de Licenciatura. Universidad Nacional Autónoma de México. México.

Schätti, B.A. & Stutz. 2016. A short account of the snakes of Southern Oaxaca, Mexico. Published by the authors. Oaxaca de Juárez, México.

Siria-Hernández, C., R. García-Collazo, C. Chávez Tapia & F. Mallory. 2006. *Pseudoleptodeira uribei* (Ramírez y Smith, 1992): Adición a la ofidiofauna de Oaxaca, México. Boletín de la Sociedad Herpetológica Mexicana 13:25-26.