

New records for *Diadophis punctatus* (Linnaeus, 1766) (Squamata: Dipsadidae) in the State of Mexico, Mexico

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The ringneck snake, *Diadophis punctatus* (Linnaeus, 1766) is a small species (max. snout-vent length 405 mm) characterized by a dark grey or blackish dorsal colouration that contrasts with the conspicuous colour of its neck band and the ventral surfaces that vary from bright red to pale yellow or cream with a series of black dots (Ramírez-Bautista et al., 2009). Ringneck snakes are widely distributed in North America, from southeastern Canada through most of the United States and Mexico (Fig. 1), where the species occurs in the Central Plateau and the Trans-Mexican Volcanic Belt in central Mexico (Hammerson and Frost, 2007; Ramírez-Bautista et al., 2009; Fontanella and Siddall, 2010). In the southern part of its distribution in central Mexico, it inhabits tropical and temperate forests as well as scrubs (Ramírez-Bautista et al., 2009; Fernández-Badillo et al., 2017). Although the species is distributed in the Trans-Mexican Volcanic Belt in central Mexico, there are few records in the states of Querétaro, Hidalgo, and State of Mexico (Dixon and Lemos-Espinal, 2010; Ramírez-Bautista et al., 2014). In the State of Mexico, there records exist from only five municipalities (Méndez-de la Cruz et al., 1992; Alvarez et al., 2006; Ramírez-Bautista et al., 2009; Fig. 1).

Fieldwork was conducted from 2017–20 in different municipalities of the State of Mexico with the aim of documenting the local reptile distribution. For each

encounter with *D. punctatus*, we took photographs and recorded locality, GPS coordinates, and elevation. We did not collect specimens. To identify previous records of the species in the region, we searched the literature and the Global Biodiversity Information Facility online database (GBIF, 2020).

On 10 November 2017, we recorded the species in La Trampa, Almoloya de Juárez Municipality (19.4888°N, 99.8477°W, elevation 2718 m; Fig. 2B). The snake was found beneath a rock in a grassy area. This is the first municipality record for Almoloya de Juárez (Fig. 1), about 41 km by air towards the northwest from the nearest previous record in San Mateo Atenco, State of Mexico (19.2703°N 99.5333°W; GBIF, 2020). On 6 August 2020 we recorded a second individual at Rancho “El Chabacano,” Encinillas, Polotitlán Municipality (20.1649°N, 99.7543°W, elevation 2450 m; Fig. 2A). This individual was encountered while it was active during the day in an agricultural area. This is the first municipality record for Polotitlán (Fig. 1), about 59 km by air to the south from the nearest record in Cadereyta de Montes in Querétaro State (20.6982°N 99.75176°W; GBIF, 2020). The municipality of Polotitlán is located in the northernmost part of the State of Mexico, close to the borders with Hidalgo and Querétaro States.

Our new records contribute to a better understanding of the distribution of *D. punctatus* in the State of Mexico. The previous records in the state are known from the municipalities of Tepotzotlán, San Mateo Atenco, Naucalpan, Tultitlán, and the Sierra de Guadalupe (Méndez-de la Cruz et al., 1992; Alvarez et al., 2006; Ramírez-Bautista et al., 2009; GBIF, 2020), located in the central region of the State of Mexico in the vicinity of Mexico City. Therefore, our new records in Polotitlán and Almoloya Municipalities show that the species is more widely distributed in the State of Mexico.

The distribution of *D. punctatus* has not been studied before at a regional scale in central Mexico. We found that the area of the species’ distribution proposed in the *Red List* of the International Union for the Conservation of Nature (Hammerson and Frost, 2007) is based on

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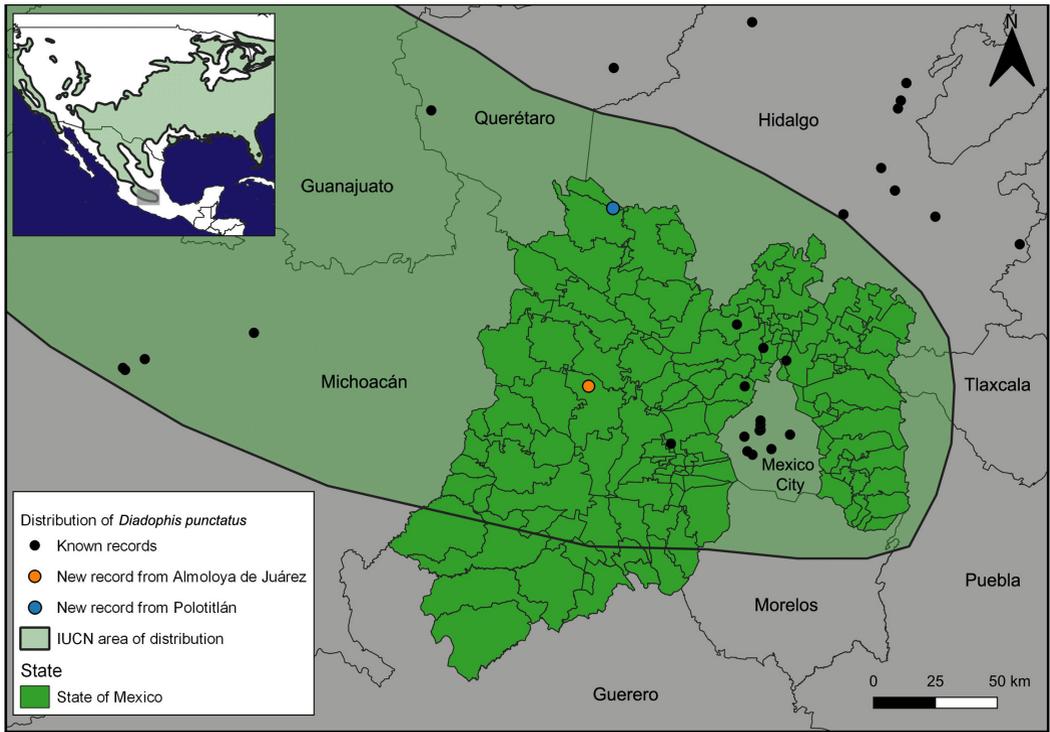


Figure 1. Distribution of *Diadophis punctatus* in the State of Mexico and adjacent states. The detail of localities shows that the IUCN range map does not cover the entire distribution of the species.

scarce records in large areas between those located in Mexico City and the State of Mexico and with the records in the states of Michoacán, Querétaro, and Hidalgo (Fig. 1). Our new records are partly bridging this gap and help with a better understanding of the species' distribution in the region. The record from Polotitlán lies between the records from Querétaro and State of Mexico filling a gap of 118 km. Our record from Almoloya de Juárez fills a gap between the records from central Michoacán with the previous records in the State of Mexico, filling a gap of 173 km. Considering the number of known records in the reviewed states, the case of Mexico City stands out, with more records than Querétaro and Michoacán combined, even when though the area is smaller and, currently, it is more urbanized (Ramírez-Bautista et al., 2009). In contrast, there are no records of *D. punctatus* from the adjacent states of Tlaxcala, Morelos, and Puebla, even though these have similar types of habitat than the states where the species has been recorded (Woolrich-Piña et al., 2017; GBIF, 2020). Our work highlights the importance of biodiversity inventories, which provide essential information about rarely encountered species such as *D. punctatus*.

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Figure 2. Photographic records of *Diadophis punctatus* in the State of Mexico, Mexico. (A) An individual from Polotitlán Municipality. (B) An individual from Almoloya de Juárez Municipality.

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