

First Record of *Lichanura trivirgata* Cope, 1868 (Squamata: Boidae) from Coronados Island, Gulf of California, Mexico

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Lichanura trivirgata Cope, 1868, is the only representative of the family Boidae on islands in the Gulf of California (Grismer, 2002). It is a medium length snake, with a blunt head, small eyes, and a short prehensile tail (Stebbins, 2003). Its current distribution spans the xeric regions around the Gulf of California, from southwestern California in the United States to the tip of the Baja California peninsula and southern Arizona to the vicinity of Guaymas in Sonora, Mexico. It is known to occur on nine islands, including Cedros and Santa Margarita islands in the Pacific Ocean and Angel de la Guarda, Mejia, Tiburon, Carmen, San Marcos, Espiritu Santo and Cerralvo islands in the Gulf of California (Grismer, 2002; Frick et al., 2016; Fig. 1). The species is on the Mexican list of endangered species (NOM-059) (SEMARNAT, 2010).

On 12 April 2013 at 20:34 h, we found an adult Rosy Boa on Coronados Island (26.1166667°N, -111.2833333°W, datum WGS84) in the Gulf of California. It was a male measuring 470 mm in snout-vent length (SVL), 562 mm in total length and with a mass of 75 g (Fig. 2). Three voucher photographs were deposited in the Herpetological Collection, San Diego Natural History Museum (SDSNH_HerpPC_05372, SDSNH_HerpPC_05373, and SDSNH_HerpPC_05374). This is the first record of *L. trivirgata* on Coronados Island.

Coronados Island is an ancient volcano that lies 2.7 km off the coast of Baja California, with a landmass of 7.6 km², and separated from the peninsula by a channel 20 m in depth (Carreño and Helenes, 2002). With the addition of the Rosy Boa, seventeen species of reptiles

can be found there (Grismer, 2002). Discoveries of new records of reptile species on the uninhabited desert islands in the Gulf of California are rare, especially for secretive species like snakes. But, in recent years, new reports have been increasing (Lazcano et al., 2011; Arnaud et al., 2014; Blázquez et al., 2018). In the last 20 years, the Rosy Boa has been added to the check-lists of Carmen and Espiritu Santo islands, and will likely be found on additional islands in the future.

Wood et al. (2008) proposed a novel phylogeographic pattern for this species. They found three major mtDNA lineages and suggested they were the result of a northern Gulf vicariance event (7.4 mya) that happened among ancestral populations distributed in

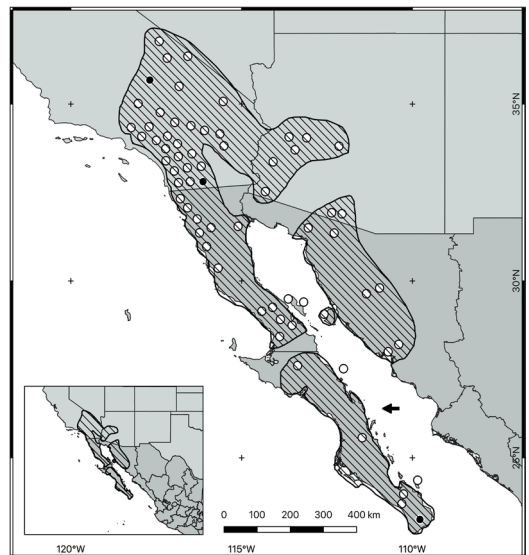


Figure 1. Distribution map of *Lichanura trivirgata*. Solid circles mark type-localities; open circles indicate other records. The arrow indicates the new record reported here.

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Figure 2. *Lichanura trivirgata* found in Coronados Island.

southwestern Arizona prior to the development of the Gulf of California. One of those lineages extended into the developing Baja California peninsula, and then a trans-gulf dispersal from west-to-east led the successful invasion of the Sonoran coast. This west-to-east pattern of migration implies the need for over-water dispersal, which may help explain why the species has been a successful colonizer of islands.

For islands close to the coast, like Coronados, colonization by reptiles is also plausible via floating debris that moves eastward from the peninsular coast driven by tropical hurricanes. Soulé and Sloan (1996) suggested this mechanism for *Pituophis catenifer* reaching Tiburón Island. Murphy and Aguirre-León (2002) and Arnaud et al. (2014) also invoked it to explain the presence of *Crotalus ruber* on Montserrat and Coronados Islands. Alternatively, the species may have been present when there was a land-positive connection and became isolated when sea levels rose. Finally, Coronados Island's beaches are very popular with tourists making day-trips from Loreto. It is not impossible that the Rosy Boa could have reached the island in their boats.

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