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Kyphosis in a free-living *Marisora brachypoda* (Squamata: Scincidae) from Utila Island, Honduras

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The skink *Marisora brachypoda* (Taylor, 1956) is known from low to moderate elevations in Central America. In Honduras, the species is widespread in open habitats across much of the mainland and is reported on Utila Island (McCranie, 2018). Utila Island is part of the Honduran Department of the Bay Islands, being the westernmost island of the three major Bay Islands (Utila, Roatan, Guanaja) off the Caribbean coast of Honduras (McCraine, 2018). Notably, populations of Marisora on the islands of Roatan and Guanaja represent a cryptic endemic species, *M. roatanae* (Hedges & Conn, 2012), while populations occurring on Utila belong to *M. brachypoda* (McCranie & Orellano, 2014).

On multiple occasions over the course of April and May of 2018, we observed an adult male *M. brachypoda* with a visible vertical curvature of the spine, basking regularly on a tree trunk ca. 2.2 m high outside the Kanahau Utila Research and Conservation Facility (KURCF) (16.119383° N, 86.884989° W, WGS 84). Despite its visible deformity, the skink appeared to move and behave in a normal way, being extremely quick and agile whilst moving up and down the tree. On 25 May 2018, 13:00 h, we managed to capture and inspect the individual while collecting morphological data (Snout vent length: 70.4 mm; tail length: 64 mm, weight: 7.3 g). Upon external visual inspection, the kyphosis started in the mid-section of its body, continuing all the way to the end of its tail (Fig. 1.). The individual also presented signs of caudal autotomy and subsequent regeneration, which can be observed in Figure 1. To our knowledge, this is the first evidence of kyphosis in the genus *Marisora*.

Malformations such as the kyphosis seen in this individual have been reported in other free-living populations of lizards (Gering, 2009; Garin-Barrio et al., 2011; Pérez-Delgadillo et al., 2015; Ortiz-Medina & Valdez-Villavicencio, 2016; Valdez-Villavicencio et al., 2016), as well as captive populations of skinks (Cooper et al., 1982). Bellairs (1981) discussed the aetiology and pathogenesis of various developmental abnormalities of reptiles, and stated that they are of either genetic or environmental origin. In reptiles, spinal malformations can arise owing to incorrect conditions during the incubation of eggs, i.e. excessively low or high temperatures and low relative humidity; though notably, "toxins and pollutants" (e.g. insecticides) might also be responsible for malformations observed in wild reptiles (Bellairs, 1981). Additional studies have also shown that inbreeding of reptile populations with low genetic diversity can cause malformations (Madsen et al., 1992; Olsson et al., 1994; 1996), and that spinal malformations can be caused by metabolic bone diseases (Frye, 1991).

Figure 1. Lateral view of the adult male *M. brachypoda* with kyphosis

In this case, as our diagnosis is purely external, we cannot safely confirm the cause of the deformity in *M. brachypoda*. While we were unable to collect and radiograph the specimen, ideally, such practice should be followed as it allows for more detailed investigation of skeletal abnormalities. Nonetheless, our observations demonstrate that individuals can survive under natural circumstance with such a developmental anomaly.

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