

First record of *Ramphotyphlops  
braminus* (DAUDIN, 1803) on  
Madeira Island (Portugal)

Madeira is a volcanic island (size circa 770 km<sup>2</sup>) lying about 700 km off the west coast of Africa and about 900 km from the southwestern coast of the Iberian Peninsula (Portugal). The age of the island is about 4.6 – 5.2 million years (GELDMACHER et al. 2000). The native herpetofauna is very depauperate, probably due to the great geographical isolation of the island.

The Madeira Wall Lizard, *Teira dugesii* (MILNE-EDWARDS, 1829) is the unique extant, flightless vertebrate endemic of Madeira (JESUS et al. 2009). Introduced *Hemidactylus mabouia* (MOREAU DE JONNÉS, 1818) was first reported in the city of Funchal (Madeira Island) almost ten years ago (JESUS et al. 2002), and since then several observations have been made in this area. *Tarentola mauritanica* (LINNAEUS, 1758) was also only relatively recently introduced, its first report from Madeira dating back almost 20 years (BÁEZ & BISCOITO 1993).



Fig. 1: *Ramphotyphlops braminus* (DAUDIN, 1803) from Funchal (São Martinho area), Madeira Island (Portugal). (Photo: Miguel SEQUEIRA)

when it was found at Garajau, located seven km east of Funchal. Since then, the species was frequently observed in several places as far as 20 km from its initial location. *Rana perezi* SEOANE, 1885 was introduced and forms true populations. In some places it is very abundant. It can be found in "Levadas" (artificial water channels) and some water reservoirs as well as small natural streams. *Hyla meridionalis* BOETTGER, 1874 was introduced to Madeira in the 19th century by CONDE DE CARVALHAL, however not successfully. Although there are later references to the existence of this species, it is currently almost certainly extinct. The purported or erroneously mentioned presence of *Gallotia galloti* (OUDART, 1839) and *Chalcides viridanus* (GRAVENHORST, 1851) remained unconfirmed (PASTEUR 1981; MALKMUS 1995; UETZ 2012) and WAGNER et al. (2012) reported an occasional record of *Agama agama* (LINNAEUS, 1758) and *Chamaeleo chamaeleon* (LINNAEUS, 1758). Concerning snakes, such occasional records were reported in local newspapers, e.g., the

American Corn Snake, *Pantherophis guttatus* (LINNAEUS, 1766). A couple of years ago, an individual of the Iberian Ladder Snake *Rhinechis scalaris* (SCHINZ, 1822) was captured in Faial, a locality in the northern part of the Island and delivered dead to the Madeira University. These records did not correspond to specimens of extant Madeira populations. These individuals have probably escaped from domestic captivity, or they were transported to the island with merchandise from the mainland.

The authors think that the case of *Ramphotyphlops braminus* (DAUDIN, 1803) is different. In the last weeks, some individuals were observed by local people in Funchal (São Martinho area). The more distant records are one to two km apart. This suggests that a larger population may exist. Four individuals of *R. braminus* were captured by local people and delivered at the University, three already dead and one still alive (Fig. 1). One of them was already preserved in ethanol, and another was in an advanced state of decomposition.

*Ramphotyphlops braminus* has a wide distribution, from Africa to Asia, Indonesia, Australia and United States of America (UETZ 2012). Native to Asia, it has been introduced in many islands around the world (KAMOSAWA & OTA 1996; JESUS et al. 2002; KLEV 2002; LOOPE & HELWEG 2004; LÓPEZ-JURADO et al. 2006). The species is a typical typhlopoid, characterized by the homogeneous diameter throughout its cylindrical body, its small adult total length of about 175 mm, slightly rounded and truncated head, short tail ending in a thorn, smooth, equal-sized scales dorsally and ventrally, rounded rostral scale, and brownish color with lighter ventral side (GLAW & VENCES 1994; STAFFORD & MEYER 2000). It is believed that populations are constituted by parthenogenetic individuals. This condition may favor the colonization of oceanic islands.

To corroborate the morphology-based identification, we analyzed partial sequences of mitochondrial cytochrome *b* gene. Genomic DNA was extracted following standard phenol-chloroform protocols and amplified for cytochrome *b* by PCR using the primers according to KOCHER et al. (1989) and conditions described in HARRIS et al. (1998). Amplified products were sequenced on an automated sequencer (ABI® 310 Genetic Analyzer). This resulted in two identical sequences of 293 base pairs for cytochrome *b*, which were deposited at GenBank, accession numbers KC700333 and KC700334. Comparing these sequences to those from GenBank revealed that they were 99 % identical to three sequences of *Ramphotyphlops braminus*, namely, GQ469118 (ADALSTEINSSON et al. 2009), DQ343649 (YAN et al. 2008) and U69865 (CAMPBELL 1997).

This genetic marker and the available sequences do not allow to define the place of origin but it is likely that the blindsnake was introduced from neighboring Canary Islands. This is the most probable assumption because of the significant ferry boat traffic between Madeira and the Canary Islands in recent years. *Ramphotyphlops braminus* was first reported from the Canary Islands in 2004 (LÓPEZ-JURADO et al. 2006) in the south of Gran Canaria, where relatively high densities were found in some

gardens. Recently, URIOSTE & MATEO (2011) reported them in five of the Canary Islands, including Lanzarote, Fuerteventura, Gran Canaria, Tenerife and La Gomera.

Given the small size and its resemblance with earthworms, they were probably unnoticed elsewhere on Madeira Island before July/August 2012. Thus, the authors plan to assess a more accurate distribution of this species on the Madeira archipelago.

*Ramphotyphlops braminus* has low active dispersal abilities. However, it can be easily transported in flower pots and root balls and because of its parthenogenetic reproduction, with easy establishment of populations can be expected in parks and gardens. It is more than likely that plant nurseries and plant production companies, and sales of ornamental plants constitute an important source for the spreading of the species across Madeira and Porto Santo Islands. The spread of the species clearly deserves careful monitoring of possible dispersal pathways.

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