Amphisbaena fuliginosa (Black and White Worm Lizard)

Family: Amphisbaenidae (Worm Lizards)
Order: Squamata (Lizards and Snakes)
Class: Reptilia (Reptiles)

Fig. 1. Black and white worm lizard, *Amphisbaena fuliginosa*.

[https://portals.iucn.org/library/efiles/html/RL-2009-001/images/rl-2009-001e-f103.gif, downloaded 2 April 2015]

TRAITS. *Amphisbaena fuliginosa* are non-venomous reptiles with a cylindrical body covered in mosaic patterning coloured in black and white (Fig. 1). They have modified skulls covered with a thick layer of keratin for digging. They have degenerated eyes with a translucent scale over them and body scales in rings (annuli). Nasal scales are slightly larger than the scales situated on the body. *Amphisbaena fuliginosa* have a rounded snout above their mouth and strong jaws with a set of sharp teeth for feeding on invertebrates but no limbs or outer ears. They can reach lengths of 30-70cm (head to tail); body annuli number 192-218 and tail annuli 24-29 in the short rounded tail. They can weigh approximately 100g at full size. They also have a continuous series of 6-10 preanal pores, and loose skin which enables them to move in a concertina fashion (concertina movement).

DISTRIBUTION. *Amphisbaena fuliginosa* can be found in the rainforest of specific areas in the continent of South America and the Caribbean. It is present in Colombia, Venezuela, Ecuador, Guyana, Suriname, French Guiana, Brazil, Peru and Trinidad (not Tobago) (Fig. 2). Murphy et al. found that two records of *Amphisbaena fuliginosa* are known from St. Lucia and Grenada (Hailey et al., 2011).

HABITAT AND ACTIVITY. Amphisbaenians or worm lizards are highly specialized, fossorial squamates (Colli and Zamboni, 1999). *Amphisbaena fuliginosa* are nocturnal, fossorial species which spends most of its time burrowing through soil with its head using a concertina motion similar to the movements in worms. It rarely surfaces during the day and only do this during heavy rainfall, flooding, or when it is unearthed by human activities such as ploughing. Since they are nocturnal animals, most of their activities such as hunting and finding a suitable mate are done during the night. *Amphisbaena fuliginosa* normally inhabits the Amazonia rainforests or savannas, however some reports from Cerrado in Brazil have shown that *Amphisbaena fuliginosa* also inhabits disturbed habitats such as densely vegetative areas and sometimes areas such as cattle ranches (Vanzolini, 2002). During the day they burrow beneath the soil feeding off arthropods they encounter. They sometimes spend time in ants nest feeding and reproducing.

FOOD AND FEEDING. *Amphisbaena fuliginosa* are carnivorous species which feed primarily on arthropods such as spiders, centipedes and insects (Fig. 3), and sometimes on small vertebrates (Colli and Zamboni, 1999). *Amphisbaena fuliginosa* are nocturnal creatures who have lost their vision to see during the day, however they detect their prey by listening and sensing small vibrations in the air and by chemoreception. They spend most of their time underground and normally surface from their tunnels during nights to mainly hunt down prey. They also prey on arthropods they encounter while burrowing through the soil. They have no venom for paralyzing or killing and thus use their powerful jaws and teeth with the ability to interlock, to easily tear apart prey. Water is normally obtained from their diet. Some research have shown that *Amphisbaena fuliginosa* invade the nests of ants and termite while burrowing to feed off the insects within them.

POPULATION ECOLOGY. *Amphisbaena fuliginosa* are normally solitary in their native forested habitat but they occasionally occupy disturbed areas such as Cerrado in South America. They are mainly found on their own however in rare occasions they may be found paired with a female during mating. In areas such as Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador and Peru these species can be found in abundance in their native habitat however because of their nocturnal and fossorial (burrowing) behaviour, seeing them is quite rare.

REPRODUCTION. Due to their fossorial behaviour not much is known about their reproductive lifestyle however they are understood to be oviparous (egg-laying) species. Since they are nocturnal species they normally find mating partner during nights. Males have organs called hemipenes which they use to mate with females. Females use leaf litters or tunnels to lay their eggs. Oviparity in *Amphisbaena fuliginosa* have also been associated with ants nest (Vanzolini, 2002).

BEHAVIOUR. *Amphisbaena fuliginosa* spend most of their time burrowing underground but sometimes come up to the surface to forage for prey. During this time they are most vulnerable and when they encounter a predator such as the coral snake (*Micrurus*) or birds they display a very unique antipredator behaviour. When threatened, an amphisbaenian goes into a defensive position where it raises both its head and tail in an upward position (Fig. 4) and moves it tail around to confuse and intimidate the predator (Pianka and Vitt, 2003). This position creates the illusion that the species has two heads and because of this most predators snatch at the tails

rather than the head. The name *Amphisbaena* means moving in both directions, in this "two-headed" animal.

APPLIED ECOLOGY. *Amphisbaena fuliginosa* is not listed in the IUCN data base. Research have found that due to its solitary behaviour and its distribution along South America, the species is not considered threatened and is recorded as "Least Concern". However in 2006 Dr. Eric N. Smith and Carl J. Franklin went on a trip to visit several localities and scientific collections in Venezuela and discovered that *Amphisbaena fuliginosa* was used as local remedy to treat flu, colds, sore throats, diarrhea, upset stomachs, cancer and AIDS (Franklin, 2000). Locals killed *Amphisbaena fuliginosa* and soaked them in white sugar cane alcohol to complete the remedy. This practice could pose a threat to the *Amphisbaena fuliginosa* population in the near future if it gets out of hand. Humans act as a possible invasive pathway for *Amphisbaena fuliginosa*. The appearance of *Amphisbaena fuliginosa* in islands such as Saint Lucia and Grenada could be due to human influence. *Amphisbaena fuliginosa* are known to occupy disturbed areas such as cattle ranches and farms in areas around Brazil. These species are sometimes encountered on site and are killed due to panic from their snake like appearance (Lemos and Facure, 2006).

REFERENCES

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Fig. 1. Distribution of *Amphisbaena fuliginosa*.

[http://reptile-database.reptarium.cz/species?genus=Amphisbaena&species=fuliginosa, downloaded 2 April 2015]

Fig. 2. *Amphisbaena fuliginosa* feeding on cricket.

[http://1.bp.blogspot.com/-CsN2ZVJF0ns/Tzvsvyfw5UI/AAAAAAAABOs/Uvg8Gpngg-E/s1600/Amphisbaena+fuliginosa+eat.jpg, downloaded 2 April 2015]

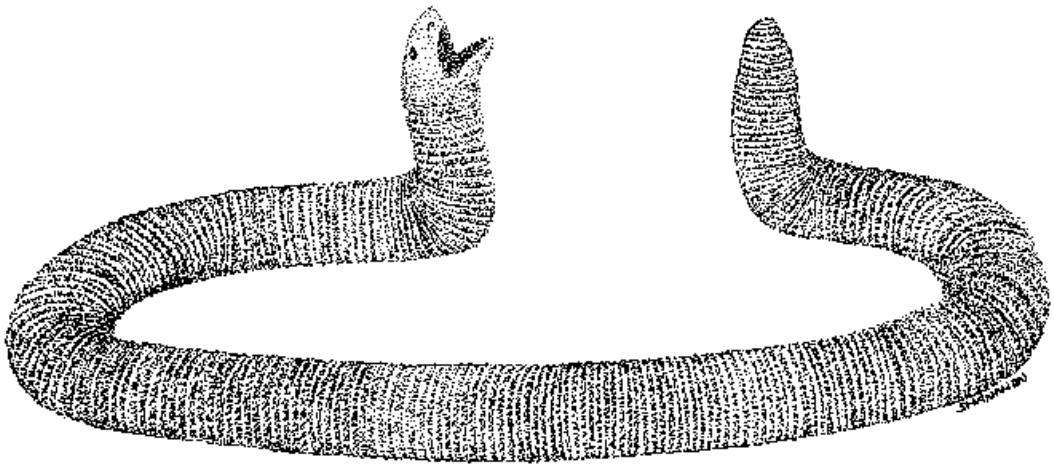

Fig. 3. Defensive posture of an amphisbaenian or worm lizard.
[https://scrubmuncher.files.wordpress.com/2010/05/wom-lizard-defensive-posture.png, downloaded 2 April 2015]