

## *Anilius scytale* (Pipe Snake or False Coral Snake)

Family: Aniliidae (Pipe Snakes)

Order: Squamata (Lizards and Snakes)

Class: Reptilia (Reptiles)



**Fig. 1.** Pipe snake, *Anilius scytale*

[[http://olhares.aeiou.pt/serpente\\_anilius\\_scytale\\_foto4354205.html](http://olhares.aeiou.pt/serpente_anilius_scytale_foto4354205.html), downloaded: 11 November 2011]

**TRAITS.** This species of snake can be approximately 70cm long; cylindrical body with no distinct neck, a flattened head and short, blunt tail which allows for burrowing. The ventral and subcaudal scales found distributed on the *Anilius scytale* can be up to twice the size of the dorsals and usually their feature displays a body that is bright red in colour. The scales consist of black tips with crosses seen in the most irregular fashion on the ventral and dorsal surfaces. The ventral scales can be summed to 248, subcaudal scales 12 and scale rows 21 at midbody. Cloacal claws are also present. A very distinct feature of *A. scytale* is the presence of teeth on the maxilla and the palatines and pterygoid together with dentary bones. In the skull of this species the bones are joined together to facilitate burrowing as the head is flattened and the neck is narrowed and its eyes are found embedded in the ocular scales (Boos, 2001).

**ECOLOGY.** *Anilius scytale* can be found distributed in Trinidad, Guyana and Amazonian South America and to date its natural history remains unknown. This species can burrow, and thrives both on ground as well as in aquatic environments. It is known to forage at night and are non venomous in nature. Experimental data proved that the *A Scytale* mainly prey on amphibians such as frogs, elongated species of snakes and certain species of fish for their survival. Females usually display a seasonal type reproduction where newborns can be noted to be present more abundantly in the rainy season. The females are ovoviviparous and can bear a total of 6-10 live young (Boos, 2001).

**LOCOMOTION.** The pipe snake having adapted to living both on land and water can move via lateral undulation (Cogger and Zweifel, 1992) this mode of locomotion is the most common among all the snake species, both terrestrial and aquatic and allows for a series of rearward movement, as there are alternate flexes from a leftward and rightward direction. The *A Scytale* generates a thrust and can push against any irregularities which lead to a continuous path. This can only be achieved when the muscles becomes activated in a sequential manner along its body. At each bend these muscles are active unilaterally from the convex to concave part of the bend. The path that is established by the head and neck of the snake would allow for each part of its body to follow in that exact order.

**DEFENSIVE BEHAVIOUR.** The unique feature of the *A. scytale* species is its distinctive adaptability to flip its red tail towards the sky and display its flattening effects. Such behaviour mimics the defensive mechanism of the venomous Cobra snake (Figure 2). A female pipe snake was kept at a herpetology lab and on conduction of several experiments, which allowed the snake to feel threatened or disturbed, while performing photographed sessions on a litter of leaf, caused the female to display its mimicking effects of tail defence. The tail emerged in an upward direction and moved in a lateral direction at 90° to which its ventral part was displayed. Another defensive adaptability which *A. scytale* relies on, is its special scale display which can be seen as coloured patterns distributed throughout its body. Such displays, as a result, acts to mimic that of a coral snake and as such predators are fooled and maintain a safe distance (O'Shea, 2008).

**SEXUAL BEHAVIOUR.** The males of this species of snake attain sexual maturity at a smaller size compared to that of females. The females have adapted to seasonal reproduction and have developed follicles near to the end of the dry season to mid of the rainy season. It can also be noted that from the months January to April, the largest embryos are normally observed. The male pipe snakes can locate/sense the females by detection of their pheromones. This scent can lead to the formation of a trail, in which the males can follow. This chemical substance that is emitted from the reproductive females undergoes analysis upon the male encounters, in which their tongue flicks, obtain 'data' that is processed by the vomeronasal organ, and if only the reproductive females are of the same species, can mating be initiated (Thomas, 1999).

Mating involves the male placing their head on the back of the female and both wind their tails around each other in an attempt to join their cloacas together. The male reproductive organ consists of two penises called hemipenes. Upon penetration by one of the hemipene to the cloaca of the female, will result in the hemipene becoming inflated and the flexible spines that are present externally to it will in turn become activated and as a result, will ensure that the hemipene does not become dislodged. Once this has been established, coupling of both sexes

will occur for an hour or two and can even last for days. The females being ovoviviparous will hatch the eggs within her body. Gestation period usually lasts for approximately 4-6 months and the litter can vary from 4 to 18 live young. These litters usually tend to be annual in *Anilius scytale* as reproduction is seasonal.

**FEEDING BEHAVIOUR.** This species of snake being non venomous, results in live feeding of prey or constriction, before attempting to indulge in swallowing. When the prey is caught, the *A. scytale* forces itself over it, locating its head and initiates swallowing. Due to their cranial modification, this species of snake are able to swallow by the enhanced movement caused by the long quadrate bone on their lower jaw which is found between the tips of the mandible. The loosened connections that are found among the bone of the skull can serve the most important function, enabling the snake to swallow its prey (Cundall, 2009).

Lateral movements at the rear of the brain case in conjunction with unilateral movements of the toothed bones can account for this initial phase of the transport of prey. In this phase the prey will be constricted, as swallowing begins slowly and the snake pushes its head over it. The jaw of the snake will begin to expand and will continue until the entire body of the prey becomes covered. There, inside the mouth, the snake begins to move one mandible at a time as its jaws move forward and to the sides. In turn these actions are only possible by the action of the powerful jaws, muscles found in the throat, and most importantly, salivary enzymes that are secreted from little teeth found on the roof of the mouth (aids in digestion). These can also function to aid in moistening of the food. Therefore, a combination of these mentioned factors will lead the prey into the anterior oesophagus and bilateral synchronization caused by the jaw, combines with the effects of low amplitude and flexions of short waves by the anterior vertebral column, which would lead to the transport of the prey occurring at a more rapid rate.

#### REFERENCES

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Figure 1. Dorsal view of *A. scytale* from Coari, state of Amazonas, Brazil, showing defense posture. Photo: G.F. Maschio.

**Figure 2.** Defensive mimicry of *Anilius scytale* to a coral snake.

[[http://www.scielo.br/scielo.php?pid=S1984-46702010000200005&script=sci\\_arttext](http://www.scielo.br/scielo.php?pid=S1984-46702010000200005&script=sci_arttext), downloaded 11<sup>th</sup> Nov 2011]

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