



Dennis McCoy

The Beaded Lizard is one of only two venomous lizards in the world. But it's not as bad as its reputation suggests, says **Stephen L. Angeli.**

Deep down in Mexico, in the heart of the former Aztec Empire, roams a reptile as old and mysterious as time itself. This living fossil is known as the Mexican Beaded Lizard, *Heloderma horridum*. The creature's Latin name literally translates into Horrible Studded Lizard. *H. horridum* is one of only two venomous lizards in the world, the other being the Gila Monster (*Heloderma suspectum*), both of which are the only two living reptiles in the *Helodermatidae* family. *H. horridum* is the older and larger of the species, meaning the Gila Monster is believed to have evolved from the Beaded Lizard. (Pregill et al., 1986; Beck & Lowe 1991).

In Mexico, the Beaded lizard is known as Escorpion, because of its venomous attribute. Beaded Lizards are encountered most frequently after summer rains, and inhabit the Pacific drainages from Southern Sonora Mexico to South Western Guatemala and two Atlantic drainages from Central Chiapas Mexico to South eastern Guatemala, where inland freshwater flows into the ocean. Habitat is primarily tropical deciduous forest and thornscrub forest, but they are also found in pine oak forest at elevations from sea level to 1500 meters. (Johnson J.P. & C, Ivanyi, 2001; Beck & Lowe 1991). There are four sub species

of Beaded lizard, which include *H. horridum exasperatum* (the Rio Fuerte Beaded lizard), *H. horridum horridum* (the Common Beaded lizard), *H. horridum alvarezii* (the Chiapas Black Beaded lizard) and *H. horridum Charlesbogerti* (the Guatemalan Beaded lizard). These four subspecies are separated by physical differences (taxonomy), localities and now even DNA blood typing. They also tend to have different colour schemes, although colour is not a definite in separating species.

The Beaded Lizards skin is covered over its entire body with tiny beads called osteoderms. Each bead



courtesy Johnathan A. Campbell and Zoo Atlanta

WARNING
Although a bite from a venomous Beaded Lizard is not usually fatal, we don't recommend that anyone attempt to keep these reptiles.

contains a tiny piece of bone that gives the animal a unique appearance as well as armour-plated skin. *H. horridum* is a large heavy bodied lizard with a semiprehensiled tail, talons like a bird of prey, a huge head and powerful jaws. Its tail is often used to hang from branches and aids in climbing. Males are the larger of the two sexes in *H. horridum*, and exceptionally large males can reach an excess of forty inches and weigh close to 10lbs,

making them one of the largest lizards in North and Central America. Typically females tend to have smaller heads, shorter necks and shorter tails than males. *H. horridum* is active throughout months of March to December, but lives underground or in shelters all but about 120 hours per year. These fascinating reptiles are primarily crepuscular, spending most of their time about in mornings from 0700 to 1000 hours and in the afternoons between 1600 and

2000 hours. (Beck & Lowe 1991).

Beaded Lizards are wholly carnivorous and have more in common with modern day snakes than lizards. Where many varanids (monitor lizards) eat almost daily, the beaded lizard can survive on one meal for several weeks even months if need be, by storing fat in its tail. *H. horridum* is an opportunistic gorge feeder eating as much as its belly can hold when it has the chance, and throughout its range it will feed on juvenile mammals and, as an avid tree climber, it has also been known to raid birds nests in search of eggs or young. (Bogart & Martin Del Campo 1956, Alvarez Del Toro 1982, Beck & Lowe 1991).

Beaded Lizards are known to latch onto their prey and not let go and, although it is venomous, the bite from *H. horridum* is extremely painful but rarely fatal to humans. In the few recorded cases that were fatal the



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This page: (top) The Guatemalan Beaded Lizard; (bottom) The Common Beaded Lizard. Opposite page: The Common Beaded Lizard



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This page (clockwise from left): Male (L) and female (R) Common Beaded Lizards - note the difference in head and neck sizes; A pair of Rio Fuente Beaded Lizards; Common Beaded Lizards hatching; A hatchling Rio Fuente Beaded Lizard. Opposite page: (top) The Chiapas Black Beaded Lizard; (bottom) The Rio Fuente Beaded Lizard.

victim usually had other physiological problems, making the effect of the venom much worse than a healthy person would experience.

The venom glands are located on both sides of the bottom jaw, and venom is dispersed by contraction of the muscles surrounding the glands. Each gland has a separate duct and in *H. horridum* this leads to a single orifice in the mouth, or in the case *H. suspectum*, three to five orifices. At the base of each tooth is a pit accompanied by a groove that runs the length of the tooth. The venom then mixes with the saliva, and is delivered through the teeth by a chewing motion. The Beaded Lizards venom is primarily used as a defensive weapon.

Beaded lizards engage in male-to-male combat prior to mating. These wrestling matches can last for hours, with the winner gaining access to the female, and the loser being forced to retreat from the area, although it still lives to fight another day. This type of conflict usually includes biting, although it is immune to its own venom.

Mating occurs from May to July in *H.h. exasperatum*, the Northernmost of the subspecies, and has been observed between September and November in *H.h. alverezi*, one of the Southernmost subspecies. The

male will start by getting on top of the female and rubbing his chin from side to side on top of her head to establish dominance. This same type of behaviour occurs in males prior to fighting, the only difference being that the female will submit to this action. Copulation between two individuals can last a few minutes to several hours, and the following gestation period can be anything from 35 to 65 days. When the female is ready, sometime in the late autumn, she will find a suitable spot, (not too dry, not too damp), and commence digging a deep hole into which she will deposit her eggs. After



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this, her role as mother is finished. In captive conditions incubation has been documented from 180 to 225 days, but in wild populations it can last anything from 10 to 12 months. If all goes well, after this time has elapsed neonate Beaded lizards will pip their heads out of the egg. Hatchlings will usually sit in the egg from 2 to 4 days soaking up their egg sack, and then eating the remaining contents of the egg.

Most literature has Beaded lizards living between 20 and 30 years. However, there is a specimen of *H.h. horridum* that was collected as a young adult in 1966. This animal was



courtesy, Zoo Atlanta

purchased by Robert W. Applegate in 1988 and currently resides in Campo, California. In the wild, it takes 6 to 8 years to mature into adulthood, so that would make this particular specimen approximately 44 to 46 years old. Similarly, Zoo Atlanta, which was opened in 1964 houses a male *H.h. exasperatum*, that was brought to the zoo that very same year as an adult, and it is alive and well to this day. These records indicate that Beaded lizards can live for fifty years or more. Interestingly the Campo animal shows no real signs of aging and was successfully bred in 2004.

There are many myths surrounding both species of venomous lizards. One of them is that it is impossible to drown a Heloderma lizard. While being able to stay submerged under water for close to an hour, much longer would certainly spell doom for a Beaded lizard or a Gila monster. It has also been a source of folklore that the breath of a Beaded Lizard is highly toxic and inhalation of it could mean sudden death. Another rumour has Heloderms spitting their venom at would be assailants. (Bogart & Martin Del Campo 1956) We all know today that these stories are nothing more than

myths and legends.

Though the Beaded lizard has few predators and is protected throughout its range, its largest threat is habitat destruction and the intrusion of man. Hopefully conservation efforts and captive propagation will ensure the survival of this magnificent reptile for our future generations to enjoy. **RC**

Stephen L. Angeli has been breeding Beaded Lizards in California for about ten years, and currently has a successful colony of twenty five healthy specimens. For more information about these reptiles or to contact him directly, you can visit his website at: www.helodermahorridum.com



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