

It Is Not a Toad But It Definitely Has Horns



IT IS NOT A TOAD BUT IT DEFINITELY HAS HORNS!

Last fall as the Tierra Grande Master Naturalists were working on a service project in Big Bend National Park, we surprised a horned lizard who was trying “heat-up” for another day in the desert sun. While he did surprise us, Melanie Croy managed to catch it to show everyone. It was a beautiful specimen of a short-horned lizard, probably the desert short-horned lizard. Although not common in the Big Bend, nor even in Texas, it does range from Central America up into the central plains of Kansas, South Dakota, and eastern Montana and on into southern Canada. Texas does have a number of different species of horned lizards, including the famous Texas Horned Lizard, *Phrynosoma cornutum*. Unfortunately, most Texas horned lizard populations are in decline and, at this point, no one seems to understand why. Habitat destruction and the use of pesticides (particularly those used to kill ants) are only two of the reasons mentioned for their decline. In the Presidio Basin (where I spend much of my time), fire ants are not yet a problem so few pesticides are used on ants but the populations are also dramatically down in that area, too. Like most lizards, these prefer to be active during the day, usually positioning themselves along an active ant trail where they pick off the ants one by one. Like most desert animals they get most of their liquid from the bodies of their prey. During winter most horned lizards hibernate, burying themselves as much as 12 inches underground to avoid freezing weather emerging when the hot weather of April warms the ground. Then they are ready to mate. Some horned lizards will lay 20 to 30 eggs in layers in the warm ground to hatch in 30-50 days later, depending on the weather. Immediately, the young lizards begin looking for and eating ants. Small at hatching, it takes a full year for the lizard to reach adult size.

Other horned lizards will retain the eggs, not putting a protective shell around them. In these species, the young usually emerge in late summer. A thin membrane encloses the baby lizard in the liquid of the amniotic sac. After a brief struggle, the membrane is torn open and the new lizard begins breathing and responding to its surrounding. Although at this stage the young are easy prey for numerous birds and some snakes, few predators can cope with the sharp horns that develop quickly as the lizard grows.

These lizards have evolved the unique live-style of an ant specialist, eating as many as 200 ants a day. Some of the horned lizard species do eat other insects, but the diet of all horned lizards is primarily ants. Ants are an unusual item for nutrition because chitin, a long chain polysaccharide that is difficult to digest, makes up as much as 80% of the ant's body. In adjusting to this diet horned lizards have evolved a much larger stomach, making up as much as 13% of the body mass when empty. To accommodate this extra large stomach, horned lizards have had to lose the streamlined body shape of so many lizards and settle on a tank-like shape. This shape makes escape from predators difficult because speed is also reduced. To compensate for this, the lizard has horns and sharp protuberances to make predators think twice about trying to eat it. I once watched a bobcat try to get a Texas Horned Lizard. As the bobcat moved in for the kill, the lizard would hunch up its body and jump (slightly) at the cat (who would jump back). After three or four tries at the lizard, the cat wandered off, still hungry.

The primary means of defense for this lizard, in addition to its spines, is cryptic coloration that allows it to hide in plain sight as it blends into its surroundings. This coloration makes the lizard almost invisible unless it moves, which isn't often. In watching a horned lizard eat, it seems that all the ants are getting away. Closer inspection reveals that the lizard only eats those ants that are close to its mouth so motion is quick and almost invisible.

The Spanish first described these lizards as they were conquering Mexico and it is thought that these lizards did evolve in the Mexico/Central America region. However its range extends from Central America to southern Canada. They seem to prefer arid regions, like the Chihuahuan Desert but they are found, obviously, in cooler, moister areas.

For Europeans who first explored the New World in the Sixteenth Century, horned lizards were yet another curiosity to write about. Because the animal is quite docile, many of the Spaniards kept the lizard as a pet....just as my son wanted to on his first encounter with one. The Conquistadores did not know the difference between a lizard and a toad so they referred to this lizard as the Sacred Toad, because it occasionally wept tears of blood. In addition, this lizard has a unique defense mechanism of actually shooting blood, sometimes to distances of several feet from their eye openings. No one is quite sure how this unique defense evolved but it is thought to have something to do with ecdysis, the shedding of its skin. To loosen its old skin from the immovable bones of its

skull the horned lizard will increase its blood pressure. If something happens during this period to further increase the blood pressure (such as a surprise grab from a curious naturalist, blood vessels rupture and out shoots the blood. At least that is one explanation.

Numerous powers have been attributed to the blood of the horned lizard. Although some people believe the blood is poisonous others think it has great healing powers. Some think it is good for increasing fertility. And some others believe it has religious significance. However, these beliefs have no basis in fact. One fact is clear: these animals are beneficial and interesting to all who encounter them.

POSTED BY Patt Sims - June, 2010