

In My Backyard: Only the Shadow knows

By C. W. (Bill) Smith

When I was matriculating at Sul Ross State College in the '60s I was deeply embedded in the Biology program and learning about the creatures of the Trans Pecos. I had already seen every creature we studied because of the almost weekly fishing and camping trips and arrowhead hunts we took on the ranches of the Big Bend when I was a kid. In those days no gates were locked and most ranchers didn't care if you came onto their property, as long as you left things as you found them and didn't shoot the cows or sheep. Besides, my dad and grandfather were pals of most of those guys and they were happy for us to come.



Photo courtesy of <http://www.desertusa.com>

But one day in class I was faced with one creature that I had not ever seen, and in fact, no one in the Big Bend had seen at that time. The only evidence of its residency was the remains found in owl pellets. (What the heck is an owl pellet, you say? When owls eat their prey they swallow it whole, bones and all. After the nutritional value is extracted by the owl's digestive system, the owl regurgitates the skin and bones in the form of a large "pellet" or skin sack. Biologists find these pellets around the nest and can get a good idea of the owl's feeding habits by examining the contents.)

So what creature in the Big Bend is as elusive as the Loch Ness Monster or Big Foot...the tiny, desert shrew, *Notiosorex crawfordi crawfordi*, also known as Crawford's Shrew. We have shrews in the Big Bend? Yes, we definitely have shrews. Our shrew is a tiny, mouse-like rodent with short ears and a long pointy snout, covered with short gray fur and possessing beady black eyes. And when I say "pointy snout" I mean ridiculously pointy, almost a caricature of a mouse and its short muzzle. It is about one-fourth the size of a house mouse and weighs only a few tenths of a gram. Adults rarely reach two inches in length, half of which is the tail.

Because of its weak vision, like bats the desert shrew relies on echolocation to find its prey. It also uses its keen sense of hearing and touch on its hunting expeditions. To move around in the dark it has short bristles on its muzzle to "feel" its way around.

According to my professors at Sul Ross, none was ever seen alive in the Big Bend until a few years ago when my son Ben found one while he was cutting the grass at our house here in Sanderson. They are unseen because of their small size and their strict nocturnal habits. Ben was moving flower pots to mow around them and discovered the diminutive creature trying to avoid the light.

Unlike other shrews and rodents, Crawford's shrew does not dig tunnels or live in the tunnels of others. Instead, they build a nest of carefully shredded plant material at the base of yuccas or around packrat nests. Shrews generally have a super high metabolic rate and have to feed constantly to stay alive. Crawford's shrew has a metabolic rate that is 75% of other species and is able to confine its hunting to the night time, resting during the day. In the desert, that is a great adaptation because there is little surface water and they are susceptible to losing their precious water stores if exposed to the heat of the day. They are like other desert dwellers in very arid conditions, in that they take their moisture from the plants and insects they eat.

Crawford's shrew is so tiny that it cannot eat all of what it catches, so it has evolved a way to preserve what it catches for multiple meals. The tiny little predator will bite the legs off grasshoppers and other prey and crush their heads to paralyze and immobilize them, but leave them alive to keep the food fresh and edible over several days. They feed primarily on insects, scorpions and millipedes and will eat some plant materials. Davis and Schmidly in *The Mammals of Texas*, report that they feed largely on "both larval and adult insects; captive specimens have eaten a wide variety of food including mealworms, cutworms,

crickets, cockroaches, houseflies, grasshoppers, moths, beetles, earwigs, centipedes, the carcasses of skinned small mammals and birds, and dead lizards."

Because the shrew is nocturnal, not much is known of its reproductive life. About three weeks after courtship and mating the female gives birth to three to five tiny, hairless pink babies, each about the size of a pinto bean. As with all mammals, she feeds the newborns her milk, which she has produced without ingesting water. After a few weeks, she begins to give them solid food, prey that she has killed and regurgitates into their mouths like a mother bird. At five or six weeks they reach adult size and leave the nest to make their own way in the world. The mother may produce two litters in one year. It is unknown how long Crawford's shrews live, probably only a year or two.

As a means of self-defense, the desert shrew gives off a foul-smelling odor that repels potential predators. But, because of its nocturnal ramblings, it is in danger from owls and other night predators.

Crawford's shrew is found all over the southwestern US and northern Mexico, in a variety of habitats, not just the desert. They (or their remains) have been found in shrublands, streamside wetlands, prairie grasslands and the flanks of mountain forestlands. They have the distinction of being the smallest mammal in our southwestern deserts. Because of their high metabolic rate, they have one of the fastest heart beats of any mammal...1000 beats per minute...and one of the highest respiratory rates...800 breaths per minute. Because of this their energy requirements are stupendous. They must eat constantly...24 hours without food might cause them to die.

So, the next time you are working in your garden or flowerbed, look very carefully when you move a rock or flower pot. You might happen to see our tiniest mammal denizen, Crawford's shrew.

What's in your backyard?