

# Debunking Myths

## Black Widow - Rattlesnakes - **Scorpions**

Tact and silence are not always among my virtues. Rarely was this better displayed than at the first training session I attended as a new naturalist at Arches National Park, that magnificent geologic wonderland near Moab, Utah. The speaker, a well-seasoned and well-intentioned ranger, was describing black widows (*Latrodectus hesperus*) and the female's legendary proclivity for a post-mating snack. Before I could stop myself, I blurted out, "You're wrong!"

Oh, for a little tact and silence.

The ranger looked at me as if I were deranged. With forbearance and patience, however, he asked me what I meant.

### **Myths about Black Widows**

I explained that although a female black widow may consume her mate, she seldom does so immediately after a copulatory event. Instead, the male, about one third the size of his mate, generally remains in the web after mating, or he simply wanders away at his leisure. Ones that do hang around may or may not be consumed sometime later.

Males have adapted this behavior because they have nothing better to do with their lives after mating. Before he copulates, a black widow male first loads two knobby organs, known as "pedipalps," with sperm, then he goes in search of a female. Upon finding his potential mate, he initiates the romance by snipping her web, cutting off her escape routes. He caresses her legs and finally inserts his two pedipalps, which break off, rendering him impotent thereafter.

Lacking an ability to procreate, he may conclude that he might as well as sit in his mate's web and wait to be eaten, but I like to think that male black widow spiders are the most selfless creatures of the desert. How many males of other species would provide food for their families by allowing themselves be eaten by their mate?

### **My Campfire Program**

Surprised that rangers had the wrong information, I decided that I would structure my campfire program to address some of the myths and realities associated with desert creatures like rattlesnakes, scorpions and tarantulas. During my years in Moab, I had discovered that many locals were filled with misinformation. I had heard them say, for instance, that you shouldn't leave licorice in your tent because rattlesnakes will come in to seek out the long,

skinny food; that a scorpion's bite will kill you; and that tarantulas' eyes turn red before they leap up to six feet to attack their prey.

Visitors were just as misinformed as our locals. Many seemed to think they were in an Oliver Stone movie with a deadly desert animal lurking in every crack, just waiting to pounce, attack and kill. Discrediting this conspiracy, I told our visitors that even though I had lived in and explored around Moab for a decade, I had actually seen very few rattlesnakes, scorpions and spiders. I suggested that my audience should probably be more concerned about being injured by bumping into a fellow traveler.

## **Rattlesnake Myths**

Rattlesnakes seemed to elicit the most fear and most incorrect information. When I asked people at my campfire talk whether a person could tell the age of a rattler by counting the number of rattles, about half the hands would rise. I told them that although they were wrong, they were not alone. This myth has persisted since it first appeared in print, way back in 1615. Rattlesnakes add a rattle each time they shed their skin, which occurs two to four times a year. They change their skin more often when they are younger, and they all lose rattles periodically. About all the rattles tell you for certain is that the serpent is a rattlesnake.

Snake bite treatment has also generated several dubious and potentially dangerous ideas. Widely accepted beliefs hold that you should treat a snake bite by applying a tourniquet, lancing the wound and sucking out the venom or that you should apply ice and quickly seek medical care. More fanciful beliefs suggest that you should apply an onion poultice to the wound, that you should smash the snake's head and apply it to the wound, or that you should split a live chicken and apply the flesh to the wound. While you should certainly seek medical care as promptly as possible, the other treatments are ineffective, and in fact, the tourniquet, lancing and sucking approach may cause more harm than the snake bite.

In treating a wound, it should be understood that rattlesnakes can control the amount of venom they inject. Approximately 20 percent of all adult rattlesnake bites are "dry" (no venom). The remaining 80 percent range from minimal to lethal injections. You cannot tell immediately whether you have been envenomated, but if you have, tingling and swelling develop within five to 10 minutes with a "wet" bite. The simplest and best first aid is to rush to a hospital.

As many as 20 different species and subspecies of rattlesnakes inhabit the southwestern deserts. They range in size from six-foot long western diamondbacks (*Crotalus atrox*) to two- to three-foot long desert massaugas (*Sistrurus catenatus edwardsii*). The Mojave (*Crotalus scutulus*), tiger (*Crotalus tigris*), and midget-faded (*Crotalus viridis concolor*) are considered to be the most poisonous. Despite their often mythical reputation for quick movement, sidewinders (*Crotalus cerastes*) peak out at about three miles per hour, roughly the same speed as a cockroach.

When visitors ask how to avoid snake bites, I tell them, "Don't be a drunk man between the ages of 20 and 35, statistically the most commonly bitten people. Other than that, don't put your hands in places you cannot see, such as cracks, crevices and ledges above your head."

## **Myths about Scorpions**

Common sense is also the best defense in avoiding scorpion bites. If you are backpacking, for example, shake out your shoes before you put them on in the morning.

Scorpions cause much dread among desert visitors, who often think that a scorpion bite can kill you. First, scorpions don't bite; they sting with a quick whip of their tail. Second, only about 25 of the 1500 species of scorpions found worldwide have venom deadly to humans, and only one of those, the bark scorpion, makes its home in the United States. This species, *Centruroides exilicauda*, is most common in southern Arizona but it also occurs in the Grand Canyon, southern Nevada and southern California. At least 30 scorpion species are desert dwellers, including the giant desert (*Hadrurus spadix*), the largest at five-plus inches, and the boreal (*Paruroctonus boreus*), the most common and widespread. Baja California has the greatest variety with over 50 species.

Except for the bark scorpion, the stings cause about as much pain as a bee sting. Just be glad the stings are not equal to the sting of tarantula hawks, *Pepsis sp.*, which reportedly feels like an electric wand hitting you, inducing an immediate and excruciating pain that simply shuts down one's ability to do anything, except perhaps, to scream. One researcher described a tarantula hawk sting as feeling like ten flaming bullets rotating inside you all at once.

Despite their primitive and lethargic appearance, which has remained essentially unchanged since they first appeared on earth over 400 million years ago, scorpions can zero in on a potential meal faster than a heartbeat. Similar to the way seismologists locate earthquakes, scorpions determine the size and location of a meal by measuring subsurface vibrations through highly sensitive hairs and slits on their legs. They dispatch their meal – often another scorpion of the same species – with a sudden poisonous poke of the tail.

## **Tarantula Myths**

The only other multilegged creatures that compare in size to our biggest scorpion are tarantulas. Size, however, does not necessarily translate into ferocity or toxicity. Neither aggressive nor poisonous, tarantulas rely on the release of a cloud of fine, barbed, irritating hairs for defense against larger predators. These "utricating" hairs, as they are called, are especially irritating to the eyes and nose of mammals, like coyotes, skunks, and inquisitive human beings.

Although true tarantulas only inhabit the Americas, my favorite myth about tarantulas does not have an American origin. As the story goes, between the 15th and 17th centuries, an epidemic known as "tarantism" spread across southern Italy, concentrated around the seaport of Taranto. The unfortunate

people suffered through grotesque and unnatural gestures and extravagant postures, ultimately resulting in death. The cause: a spider bite. The cure: a frenzied, music-induced dance, the "tarantella," which sweated out the toxins. Needless to say, there was little truth to the claims, but new world tarantulas, in the family Theraphasidae, were named for the Italian town.

No one knows the exact number of southwestern tarantula species. All are in the genus *Aphonopelma*. They are rather difficult to tell apart, since they are all generally big, brownish-black and hairy. Females may live for up to 25 years. Males die around mating time, perishing just after mating or while searching for a mate. Tarantulas eat lizards and insects as well as other arthropods, killing with a bite from their quarter-inch fangs. Secreted enzymes break down soft tissues, allowing the spider to suck out the victim's insides.

## **Friend of Bugs**

People appeared to like the information I presented in my campfire program, usually thanking me for clearing up the "facts" they thought they knew. Now all I had to worry about was the ranger I had challenged. He seemed to think that, as in an Oliver Stone move, a new ranger lurked behind every file cabinet and under every pile of triplicates, waiting to pounce, shout and correct.

Editor's Note: As an FOB (Friend of Bugs), freelance writer [David B. Williams](#), author of *A Naturalist's Guide to Canyon Country*, thinks that male black widow spiders, with all their selflessness, should get more respect. A modified form of this article appeared in *Utah Outdoors*.

**Poison Centers across the country now have a new national emergency phone number - 1-800-222-1222**

by [David Williams](#)