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Taking the Spooky out of Spiders

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It's Halloween time. People across the country are going all out with decorations, watching scary movies and preparing their costumes. We love Halloween, but as entomologists it can be a tricky time of year. Because people share articles written by bozos about how scary and creepy and gross spiders are. And then other people who are cool send those stories to us so that we can respond.

This year, we spent huge chunk of October (#Arachtober for people who love arachnids) in the Amazon Rainforest. There are **awesome** spiders here. In this post we will use two of the most feared spiders to challenge our assumptions. **Today, we will take the spooky out of spiders.** Myth-bust. Lore-school. Fact-buffet. Let's get started.

1. **Spider Fangs**

These are the fangs of a *Phoneutria sp.* spider (a group commonly referred to as Brazilian Wandering Spiders). Facts: Spider fangs are covered in hard exoskeleton and are called chelicerae. They are attached to venom glands that are attached to muscles that inject venom. They use their fangs and venom as the first step in eating. You know how our saliva gets our digestive enzymes primed for that first bite of food? Well, venom immobilizes prey and pre-digests it so that a spider can eat it. It's like an external stomach.

Spider fangs are hollow. The red arrow in the picture above is pointing to the opening at the tip of the fang! Fangs don't drink blood. After the prey is envenomated and softened up spiders use their mouths for the next step in the digestion process. The yellow arrow is pointing to the mouth of the spider. These animals suck up the digested prey through their mouths and strain out hard bits with the hairs surrounding the opening.

These are the fangs of a red rump tarantula exuvia, which is the molted exoskeleton. See how they are oriented differently than the wandering spider? Tarantulas (along with trapdoor, Australian funnel-web, and mouse spiders) are mygalomorphs. They are Old School spiders that have fangs that point down rather than crisscross like araneomorphs (more modern spiders.)

2. **Spider Eyes**

Spiders are not creeping on you. They are not watching you as you sleep- waiting for the opportunity to pounce on you. Most spiders have 8 eyes (some species only have 6, like the brown recluse…). They can be arranged in different patterns on the cephalothorax. For the most part, spider eyes detect different levels of light. There are only a few spider species with excellent vision. So, they can't see your ghoulish face all screwed up in disgust at the sight of them. They can't see you recoil in fear or huddle in your bed petrified to move.

The red arrows on this pic of the *Phoneutria sp.* wandering spider help to show where the lateral eyes are.

This is the top plate, or carapace of the molted tarantula. Can you count all 8 eyes?

Cheat Sheet. Since this is the molted carapace of the tarantula, they ‘eyes’ you counted are actually the top layer of the eyes. Spiders molt their outer layer of fangs as well!

Here's a better view of the lateral eyes of a tarantula.

3. Spider Legs

Spiders, like all arachnids, have 8 legs. There are some spiders that use their front legs to "feel-see" their way around, holding them out in front of them like antennae. In fact, ant-mimic spiders bend their front legs and tap around and they look just like the geniculate elbowed antennae of the ants they are trying to trick so that they can eat them as a treat.

Lots of people are freaked out by spider legs. They're too long. They're too skinny. They're too hairy. They're too…spider. But, at the ends of spider legs are something that a lot of people overlook- the epic adorableness of spider toes. And their toenails. This is this tarsal segment of the wandering spider. At the tip you can see the two claws surrounded by claw tufts. These tufts spread out when the foot is on the ground and look like little paws.

Tarantulas have some of the cutest feet in the animal kingdom. This tarantula had been walking in the mud, but this shot shows us the millions of hairs on the feet. There is some debate in the spider world about whether or not silk or a silk-like secretion comes from the hairs on tarantula feet. But in any event their feet are fuzzy! Kittens schmittens. Denounce that gripping fear and RESPECT THE CUTE.

Something interesting we learned while poking around with our microscope was that pedipalps (the leg-like mouthparts that extended out from the front of the cephalothorax) have only one claw! We never knew that before!! You're never too old to learn something new about your favorite animals!!

We hope you learned a bit about spiders body parts from our two Peruvian Amazon spider friends. Jess and I get to travel to the rainforest a few times a year and each time we see something new!

For more information on spiders and how they are not out to get you check out my article in Pest Control Magazine.

All photos taken with the MicroDirect HD by Celestron.