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THE SCOOP ON SCORPIONS



As the temperature rises, so does the scorpion activity around our homes, schools, and offices. The scoop on scorpions is this: myths and misconceptions abound. Read on for the facts...

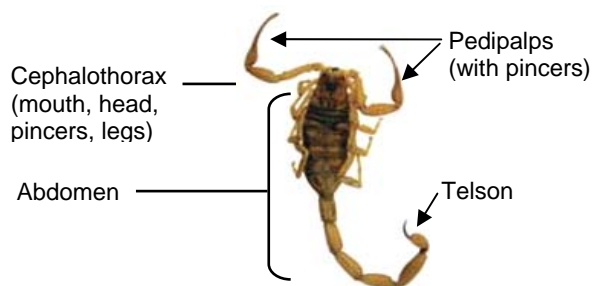
Scorpions are one of the oldest known terrestrial arthropods. Approximately 1,500 species have been described worldwide, occupying a range of habitats from prairies to rainforests, and lowlands to snow-covered mountains. Nowhere are scorpions more common in the United States than the desert southwest, and Arizona sports the greatest diversity and abundance. At least 40 species have been described (so far) here.

Description...

Scorpions are venomous arthropods in the class Arachnida, a group of arthropods which includes spiders, mites, and even king crabs! There are several species of arachnids found in Arizona that appear scorpion-like as they look similar (sun spider, tailless whipscorpion, vinegaroon, etc.). Scorpion-like arachnids are not commonly encountered and pose little to no threat to humans. See <http://ag.arizona.edu/pubs/insects/az1223/> for more details.

You can generally identify a scorpion by the following:

Two main body regions: a cephalothorax and an abdomen. The cephalothorax includes pincers and *four* pairs of legs. The abdomen is where digestion takes place and includes a long segmented tail with a **bulbous end segment, the telson**. The telson houses venom and has a stinger on the tip.



Scorpion Senses...

Scorpion eye sight isn't so great. (Holding still, a human may as well be a piece of furniture!) Other senses prevail with the aid of air-vibration-sensing hairs on the pedipalps, ground-vibration sensors on the leg-tips, and specialized

chemoreceptor organs under the body called "pectines" (attached to their underside and held against the substrate beneath).

Behavior...

Scorpions are highly sedentary; some species can survive without food or water for several months. Most scorpions are nocturnal (night active). They are excellent "ambush" predators and detect prey when it comes within reach – and readily consume fellow scorpions, too! They can be found during the daytime where it is cool and moist: under rocks, wood, tree bark, vegetation, or in burrows.

Scorpions may be more abundant near undeveloped land, particularly that which is rocky (mountain preserves), or around artificial landscaping with plenty of boulders and rocks. Populations are also higher where potential for prey may be more abundant: in the desert, this means historic washes, present-day rerouted washes, and yards that are watered well.

Females are *gravid* (carrying developing young or eggs) anywhere from 5-18 months, and give birth to live young (15-30). Newborn scorpions promptly climb on mom's back and remain there until their first molt (1-3 weeks). They may take 1-2 years and several more molts to reach adult size, but are already venomous. The average scorpion lifespan is 3-5 years; however, some may live upwards of 12 years!

All scorpions possess venom and can sting, but their natural tendency is to escape and hide.

Common Scorpions in Arizona...

Arizona Bark Scorpion (*Centruroides exilicauda*)

This is Arizona's most commonly encountered scorpion in urban areas/structures, and also the most venomous in the United States.

Bark scorpions are light tan or yellow-brown, and are 1"-3" long (including tail). They are found in southeast California, southwest New Mexico, Mexico, and throughout Arizona. They are the only scorpion in



Unlike other scorpions, bark scorpions are social

Arizona with the ability and strong tendency to climb – a characteristic which can aid in a quick identification. They often assume a vertical position on walls or an upside-down position (“negative geotaxis”) on all but the most slippery surfaces (e.g. glass). They do not burrow.

Bark scorpions are the only *social* scorpion likely found in urban areas. They may group in large numbers – notably in cinderblock walls which line backyards, neighborhoods, and school play fields. They access the interior of the hollow blocks through narrow cracks and crevices.

As a general retreat, bark scorpions seek out dark places they can squeeze into. This includes a great variety of natural and man-made places: under tree bark, rocks, potted plants, patio debris, wetted door mats, narrow cracks in wood or cement, especially where prey is abundant.

Young children, the elderly, and hypertensive people are the most adversely affected by the venom, and may require antivenin. If you suspect a bark scorpion sting, call **Poison Control (state-wide): 1-800-222-1222**. They can direct folks to the nearest medical facility if necessary.

Striped-tail Scorpion (*Vaejovis spp.*)

Striped-tail scorpions are roughly the same size and color overall as a bark scorpion, but have “bulkier” pincers and tail. A key feature is the dark, thin stripes along the underside of the tail (which faces upward when the tail is curled over their back).



Several species belong to the genus *Vaejovis*, and do occur in urban areas. They are also known as “ground scorpions” as they typically dig a small burrow or “scrape” underneath objects (though they are capable of digging as deep as one meter!). Their venom is mild and not typically a health concern unless an allergic reaction occurs.

Giant Desert Hairy Scorpion (*Hadrurus arizonensis*)

These are the largest scorpions in North America; up to 6” long (more than double the size of bark and striped tail scorpions!). They are rarely found in structures and are becoming increasingly uncommon.



“Desert hairies” may be found in/near washes where they burrow deeply. They readily feed on other scorpions, a variety of insects, and even small lizards, and

often use their pincers to subdue prey more than relying on their venom.

Despite their size, appearance, and scary name, their venom is mild and their sting is comparable to a bee sting.

IPM Methods for Scorpions

Generally, scorpions are beneficial in the control of many arthropods, including cockroaches and crickets. In large numbers and in schools, homes, and offices, scorpions themselves can become the pest. To manage scorpions, try the following:

- ✓ Stucco cinderblock walls (this minimizes cracks & crevices for hiding).
- ✓ Pest-proof structures: install tight-fitting window screens, weather stripping and door sweeps on exterior doors; plug holes with steel wool; caulk around pipes and conduits.

- * Find, physically collect, and remove scorpions. Scorpions fluoresce under a black light. After dark grab a buddy, a black light, some barbeque tongs, and a bucket to collect.

Multiple collections (3-4) in one summer can greatly decrease localized scorpion populations well into the following season.

This is a more effective for method managing scorpions than pesticides.

- ✓ Minimize low ground and creeping vegetation.
- ✓ Keep vegetation pruned away from buildings (including trees!).
- ✓ Manage food sources (within reason) with sanitation, and by limiting water and harborages (boxes, logs, boards, stones, bricks, clutter, etc. around building).
- ✓ Store garbage containers in a frame that allows them to rest above ground level, or keep them on concrete.
- ✓ Encourage natural predators wherever possible: roadrunners, various owls, pallid bats.



A giant desert hairy scorpion lit by a black light (ultraviolet light).

Information used from:

1. Carl Olson, Associate Curator for the Department of Entomology, University of Arizona..
2. Prchal, Steven J. Arizona-Sonora Desert Museum. Scorpions.
3. Natwick, E.T. UC Cooperative Extension. Scorpions.
4. Scorpions. University of Arizona Urban IPM website: <http://ag.arizona.edu/pubs/insects/az1223/>.

For information on Arizona’s IPM in Schools program contact Dawn Gouge 520-568-2273, dhgouge@ag.arizona.edu



Few bugs are bad! More than 95% of all insect species are beneficial to humans