ARACHNIDS OF AFGHANISTAN

SCORPION VENOMS AND THEIR EFFECTS

Scorpions use their sting for a number of reasons including prey capture and mating, but also as a defense mechanism, enabling them to kill creatures much larger than themselves. Nearly all scorpion venoms are complex mixtures of neurotoxins (toxins which affect the victim's nervous system) and other substances. Each species of scorpion has a unique mixture. Not all scorpions have venom potent enough to be considered dangerous to humans.

The severity of envenomation (danger of venom injected) depends on various factors such as the health and age of the victim, the sting site and species, as well as size and degree of agitation of the scorpion. The only effective treatment for a life-threatening scorpion sting is a geographic– or species-specific antivenin, administered in a medical facility by trained medical personnel.

Most scorpions have a neurotoxic venom which produces severe pain and swelling at the site of the sting. If the victim is allergic to bee and wasp stings these symptoms can be severe. Numbness, frothing at the mouth, difficulties in breathing, including respiratory paralysis, muscle twitching and convulsions may follow. Death may occur due to heart or respiratory failure. If stung, always seek medical attention immediately.

Hemiscorpius lepturus has a highly cytotoxic venom, which can cause serious wounds and inflammations that look like third degree burns with necrosis and blisters. These wounds are slow and difficult to heal. No antivenin exists for treating sting victims of *H. lepturus.*

Unlike most scorpions which have neurotoxic venoms, Hemiscorpius lepturus (inset photo) has a highly cytotoxic venom, which can cause wounds that look like third degree burns with necrosis and blisters.

PREVENTING SCORPION, SPIDER, AND SOLPUGID BITES AND STINGS

Do not handle or disturb scorpions, spiders, and solpugids.

Sanitation and exclusion are the most effective, long-term measures of reducing scorpion, spider, and solpugid numbers around tents and structures. Eliminate as many of the hiding places as possible for scorpions, spiders, and solpugids and their prey.

Sandbag ground edges of tents to seal entry gaps.

Always shake out shoes, sleeping bags, and clothing prior to use.

Never walk barefoot; wear shoes or boots (avoid open-toed footwear) when walking outdoors.

If possible avoid sleeping on the ground. Ensure bedding does not touch tent or room walls.

In buildings, prevent scorpion, spider, and solpugid entry by sealing and weather stripping around thresholds and gaps where utilities enter structures.

Use sticky boards placed along tent and building edges and under furniture to capture scorpions, spiders, and solpugids.

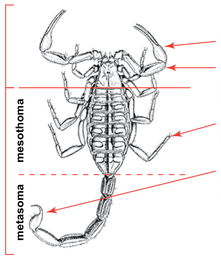
Take proper precautions: wear gloves when handling tentage, rocks, crates, and lumber, or moving materials that have been in contact with the ground.

Look before you reach into, under, over, or around.

HABITATS

Most scorpions and solpugids prefer to live in arid environments and they are most abundant in the hot desert regions of Afghanistan. Black widow spiders and tarantulas can be encountered throughout Afghanistan. Scorpions, solpugids, and tarantulas build scrapes or burrows in the sand and soil. Crumbling rock faces, brick walls, caves, crawl spaces, and wood or debris piles provide excellent daytime retreats for scorpions, black widow spiders, and solpugids. Abandoned infantry trenches or fighting positions may harbor large numbers of some scorpion species. Scorpions, spiders and solpugids will invade tents and structures where they may crawl into or under any object that affords some protection. The larger solpugid species in Afghanistan are attracted to lights at night, and are commonly found near campfires and under streetlamps.

SCORPIONS



Prosoma- portion of the scorpion's body that includes the head, pedipalps and legs (the legs are actually attached to the head, also called the cephalothorax)

Opisthosoma- the body or abdomen of the scorpion, further divided into the **mesothoma** and **metasoma** (tail)

Chela- claw-like part of the pedipalp

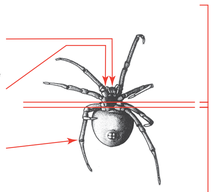
Pedipalps- appedages that contain a claw-like chela used in grasping prey and for defense

Legs- like other arachnids scorpions have four pairs of legs

Telson- specially modified segment at the tip of the "tail" that contains the venom gland

What do they look like?	Color– most yellow, brown or black in sunlight; under a blacklight they glow a greenish-blue color Size– 20mm to over 120 mm long (¾ to 4¾ inches)	
Where are they found?	During the day– under rocks, cracks and burrows Found in deserts, grasslands, savannas, forests, caves and mountains	
What is their behavior?	Most active at night	
Information on their sting.	Stings with the poison filled telson (tip of the tail) Poison is painful All scorpions are venomous but only three in Afghanistan have venom that can kill humans The most dangerous scorpions tend to have thin pedipalps (pincers) and thick metasomas (tails) where less dangerous scorpions have wider pedipalps (pincers) and thinner metasomas (tails)	
The three most dangerous scorpions in Afghanistan	*Androctonus amoreuxi* *Hottentotta alticola* *Hemiscorpius lepturus*	
Examples of other scorpions in Afghanistan	*Mesobuthus spp.* *Euscorpiops spp.* *Orthochirus bicolor*	

SPIDERS



Chelicera- jaws that are located below the eyes; the jaws are tipped with fangs that can inject venom

Pedipalps- also called palps, these two sensory feelers look like very short legs attached to the front of the spider- they taste food

Legs- spiders have eight legs, each leg consists of seven segments and has two or three tiny claws at the tip; if a leg is lost it will grow back

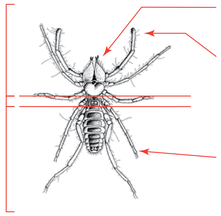
Prosoma- the fused head and thorax, also called cephalothorax; contains the brain, jaws, eyes, stomach and leg attachments

Pedicel- the waist; it connects the prosoma and opisthosoma

Opisthosoma- the belly or abdomen, it contains the guts, heart and reproductive organs and silk glands

	Female Black Widow Spider	Tarantulas
The two most dangerous spiders in Afghanistan	*Lactrodectus lugubris*	*Lycosa signoriensis*
What do they look like?	Color– jet black Size– 8mm to 15 mm (approx. ½ inch) Surface– shiny Shape– round opisthosoma (abdomen)	Color– matches their environment Size– 35mm (1⅓ inches) Surface– covered in hairs (some containing mild venom)
Where are they found?	Awake at night, they can be found in stone walls, rock crevices, woodpiles, outhouses, barns, stables, rubbish piles, trees and shrubs	Awake at night, they prefer dry areas where they dig vertical burrows which they cover with cobwebs
What is their behavior?	Most active at night. Found in dry, secluded, dimly lit areas during the daytime. Only the females can bite humans and they are usually not aggressive except when they are hungry, agitated or protecting their egg sacs.	Hide during the day and hunt for food at night. Not aggressive. Given a choice will hide in their burrow if disturbed. When cornered these spiders will assume a defensive posture, raising their front legs and baring their fangs.
Information on their bite.	Most bites occur when a person disturbs their hiding places during the day Bites can occur when a foraging spider crawls onto a person at night Venom affects the nervous system, symptoms can include local reaction, muscle cramps, belly pain, weakness, tremor, nausea and vomiting, faintness, dizziness, chest pain and trouble breathing	Most bites occur when a person disturbs their hiding places during the day Bites can occur when a foraging spider crawls onto a person at night Symptoms can include blisters, swelling and redness at the bite site; rarely fever, malaise and nausea Venomous hairs can be kicked off or shed when disturbed, these can cause skin, eye and nose irritation

SOLPUGIDS



Prosoma- the fused head and thorax, also called cephalothorax; contains the brain, jaws, eyes, stomach and leg attachments

Pedicel- the waist; it connects the prosoma and opisthosoma

Opisthosoma- the belly or abdomen of the solpugid, it contains the guts, heart and reproductive organs; segmented

Chelicera- large jaws that project from the head made up of two pieces forming two sets of pincers

Pedipalps- leglike projections that are sticky on the end to help catch and hold prey; the pedipalps and the first pair of legs are usually carried above the cephalothorax while the solpugid is standing or running

Legs- four pairs of legs; the three pairs of back legs have claws and the last pair have mallet-shaped organs beneath them

What do they look like?	Color– light gray, tan or reddish brown Size– 25mm to over 100 mm long (1 to 4+ inches) Surface– hairy Shape– bulbous opisthosoma (abdomen) Two eyes placed close together Large chlicerae (jaws) joined like pliers	
Where are they found?	During the day– under rocks, logs or debris and sometimes under the sand During the night– near streetlights, campfires and other sources of light	
What is their behavior?	Run very fast with their pedipalps and first pair of legs held up over their heads Most active at night If active during the day they will stay in shadows to avoid hot ground Will follow a moving shadow, including a human shadow, making it seem as though they are chasing you Attracted to light at night	
Information on their bite.	Not poisonous No stinger Delivers a painful pinch which can break the skin If you are pinched, clean the wound to prevent infection	

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