

# Scorpions

## and their relatives

“Arachnid” is the scientific classification category for all eight-legged relatives of insects. Spiders are the biggest group of arachnids, with nearly 3800 species known from the U.S and Canada. But the arachnid category includes other types of eight-legged creatures that sometime cause concern. Some of Idaho’s non-spider arachnids – such as scorpions – pose potential threats to human health. Two related non-spider arachnids – sun scorpions and pseudoscorpions – look fearsome but are entirely harmless. This publication will help you identify these three groups and understand the threats they pose. All three of these groups almost always are seen as lone individuals that do not require any control.

## Scorpions

### IDENTIFICATION AND BIOLOGY

Scorpions are easily identified by their claw-like pincers at the front of the head and their thin, many-segmented abdomen that ends in an enlarged bulb with a curved sting at the tip (figure 1). Five species ranging in size from 2 to 7 inches long occur in Idaho. Scorpions primarily occur in the sagebrush desert of the southern half of Idaho, but one species – the northern scorpion (*Paruroctonus boreus*) – occurs as far north as Lewiston, along the Snake River canyon of north-central Idaho. This species lives in the northernmost locations of any scorpion in the U.S.

Scorpions give birth to several dozen live young that crawl onto their mother’s back (figure 2), where they remain for several weeks without feeding and then disperse. Development to adults can take more than a year, and adults can live several years.

Scorpions are nocturnal predators of insects and other arthropods. They hide by day under rocks, stacked wood, and other protected sites, and hunt at night for insects and other prey. Scorpions kill small prey by physically crushing with their claws, while large prey are subdued by stinging. Scorpions sting by flexing their abdomen forward over their body and stabbing prey with the curved, hollow sting.

### PEST STATUS

*None of our Idaho scorpions poses a significant threat to human health.* The only exception is for those rare people who have known allergies to scorpion venom, to whom stings can be life-threatening. In an allergic reaction, it is not the poisons in the

### FLUORESCENT SCORPIONS

The bodies of some scorpions – normally pale tan to darker red-brown – glow yellow-green when exposed to ultraviolet light. Even fossils millions of years old fluoresce under ultraviolet light. Sun spiders similarly glow yellow-green under UV light.



**Figure 1.** All scorpions have a curved sting at the tip of the abdomen that delivers venom. Except for people with known allergies to scorpion venom, none of our Idaho scorpions are dangerous to people. Photo by Dennis Schotzko, University of Idaho. All rights reserved.



**Figure 2.** Newborn scorpions ride on the back of their mother until their first molt. Nymphs look like pale, miniature versions of adults. Photo by Dennis Schotzko, University of Idaho. All rights reserved.



**Figure 3.** Pseudoscorpions are small, harmless arachnids that resemble true scorpions. This specimen is ¼ inch long with legs and claws extended. Photo from Ken Gray slide collection, Oregon State University.

venom that are harmful, but rather the body's over-response to otherwise harmless proteins in the venom.

The dangerous reputation of scorpions is grossly exaggerated. All scorpions produce venom delivered via the sting at the end of the body. Our scorpions do sting defensively when disturbed, such as when people carelessly turn over a rock where a scorpion is hiding. The pain is similar to a bee sting. Localized swelling and black-and-blue discoloration can last for several days.

Only one species in the U.S. – the Arizona bark scorpion, *Centruroides exilicauda* -- is a significant medical threat to people. *This species is not known in Idaho*; it occurs in Arizona and nearby regions of southern California, Utah, and New Mexico. Sting deaths from this scorpion are extremely rare: no human fatalities have been documented in the U.S. for more than four decades. The primary danger from this species is to small children weighing less than 30 pounds.

## Pseudoscorpions

### IDENTIFICATION AND BIOLOGY

Pseudoscorpions – literally “false” scorpions – are small (1/8 to ¼ inch long), harmless arachnids that resemble true scorpions (figure 3). Like true scorpions, pseudoscorpions have big pincers at the front of the head. However, they do not have the long, thin abdomen of a scorpion, and they entirely lack a sting. Pseudoscorpions mainly live outdoors under leaf litter, moss, or loose bark, where they are predators of tiny soil-dwelling arthropods.

### PEST STATUS

Though frightening in appearance, pseudoscorpions neither bite nor sting, and so are completely harmless to people. They do

produce venom from their claws that is used to kill prey. Lone specimens in homes likely were carried inside on firewood. No control action is needed.

## Sun scorpions

### IDENTIFICATION AND BIOLOGY

Sun scorpions are scary-looking but essentially harmless arachnids (figure 4) that are also known as sun spiders, wind scorpions, and wind spiders. They occur statewide but are most common in the sagebrush plains and canyon lands of southern Idaho. In spite of their name, they are neither scorpions nor spiders. “Sun” refers to their preferred habitat of sunny desert lands where true scorpions and spiders also live. Their other names – wind spiders and wind scorpions – come from their behavior of running so rapidly that they seem to be tumbling over the ground with the wind.

Sun scorpions are easily identified by their massive jaws that project forward as toothed pincer-jaws. At first glance, sun scorpions look like they have five pairs of legs, but actually they only have four pairs. The five-legged appearance comes from their long, slender pedipalps, which they raise forward off the ground, together with their first pair of real legs, and use as feelers. Their yellow-brown body is covered in hairs.

Most Idaho sun scorpions are night-active predators that seek shelter from the sun under rocks during the day. They use their stout pincer-jaws to capture and consume prey insects, other arachnids, and sometimes small lizards.

## GIANT FLESH-EATING CAMEL SPIDERS

As if they were not scary-looking enough, a faked picture (below) of two super-sized sun scorpions crawling up the leg of a U.S. serviceman in Iraq began circulating by email during 2003. The email called these specimens camel spiders because it said they leap onto the underside of camels and gnaw into the stomach.

This widely-circulated picture and its accompanying story is a complete hoax. The original source of the hoax is unknown.

The biggest sun scorpions anywhere are 4 inches long (perhaps 6 inches if measured from their extended legs). The specimens in the faked picture were held close to the camera to make them look bigger in comparison to the soldier in the background. The proof is in the picture itself – the size

of the two specimens should be judged against the size of the shirt cuff in the foreground. As for eviscerating camels, that too is made up. The prey foods of sun scorpions are insects, and sometimes small lizards.



Photo from Snopes.com:  
<http://www.snopes.com/photos/bugs/camelspider.asp>.



**Figure 4.** Sun scorpions, also called sun spiders and wind scorpions, are hairy, yellow-brown arachnids up to 2 inches long with heavily armed jaws that point forward. Photo by Dennis Schotzko, University of Idaho. All rights reserved.

## PEST STATUS

Individual specimens sometimes wander into homes (especially residences that adjoin sagebrush rangelands), where they cause concern but pose no significant threat. They will bite defensively if mishandled or threatened. Although bites can be painful, sun scorpions are not venomous. They do not have poison glands, nor do they have fangs. If their bite breaks the skin, the main threat is secondary infection of the wound.



HERE ARE OTHER OFTEN-REPEATED BUT TOTALLY UNTRUE STORIES ABOUT SUN SCORPIONS:

**MYTH:** *Sun scorpions produce venom with an anesthetic that allows them to chew chunks of flesh from people sleeping on the ground.*

**FACT:** Sun scorpions do not produce any venom, let alone venom with a numbing chemical. And although they do bite defensively, the only "flesh" they eat is that of insects and similar small prey.

**MYTH:** *Sun spiders also are called beard cutters because they make nests by clipping hair from sleeping people.*

**FACT:** These stories have never been verified.

**MYTH:** *Sun scorpions run 25 miles per hour.*

**FACT:** Sun scorpions have been clocked at just under 2 feet per second, giving them a top speed of about 1 mile per hour. Even this value is a biological exaggeration because sun scorpions can only sprint for short bursts.

**MYTH:** *Sun scorpions scream like a baby.*

**FACT:** They don't make any sound at all.

## ABOUT THE AUTHORS:

EDWARD JOHN BECHINSKI is a Professor of Entomology; DENNIS SCHOTZKO is a retired Research Support Scientist III; and CRAIG R. BAIRD is Professor Emeritus. All are with the Division of Entomology, University of Idaho, Moscow.

Issued in furtherance of cooperative extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Charlotte V. Eberlein, Director of University of Idaho Extension, University of Idaho, Moscow, Idaho 83844. The University of Idaho provides equal opportunity in education and employment on the basis of race, color, national origin, religion, sex, sexual orientation, age, disability, or status as a disabled veteran or Vietnam-era veteran, as required by state and federal laws.

Published November 2009

© 2009, University of Idaho