

Colorado Arachnids of Interest

Pseudoscorpions

Class: Arachnida

Order: Pseudoscorpiones

Identification and Descriptive Features:

Pseudoscorpions are tiny arachnids (typically ranging from 1.25-4.5 mm body length). They possess pedipalps modified into pincers in a manner similar to scorpions. However, they differ in other features, notably possessing a broad, flattened abdomen that lacks the well developed tail and stinger.



Figure 1. Pseudoscorpion

Approximately 200 species of pseudoscorpions have been described from North America. A 1961 review of pseudoscorpions within Colorado listed 30 species; however, these arachnids have only rarely been subjects for collection so their occurrence and distribution within Colorado is poorly known.

The pseudoscorpion most often found within buildings is *Chelifer cancelloides*, sometimes known as the “house pseudoscorpion”. It is mahogany brown color with a body length of about 3-4 mm and long pedipalps that may spread 8 mm across.

Distribution in Colorado: Almost all pseudoscorpions that occur in Colorado are associated with forested areas although a few prairie species do occur. Conifer forests, including scrublands of pinyon and juniper, support several species. Others occur in association with Gambel oak and aspen. The house pseudoscorpion has an unusually broad distribution and is found associated with human dwellings over wide areas of North America and Europe.

Life History and Habits: Pseudoscorpions usually occur under rocks, among fallen leaves or needles, under bark or similar moist sites where they hunt mites, springtails and small insects. Typically they wait in ambush within small crevices and grab passing prey with the pincers. In most species, connected to the movable “finger” of the pincer is a venom gland. The venom rapidly incapacitates their prey that are then brought to the chelicerae where they are crushed and covered with digesting fluids. The pseudoscorpion drinks the liquids that are extracted from their prey through this form of exodigestion.

Prior to mating, males may fight or challenge each other over territories. The animal with the largest pincers is almost always the victor in such territorial battles. Subsequent mating behaviors vary among the pseudoscorpions. Males of some species leave packets of sperm (spermatophore) on a silken stalk that females then locate through associated attractant

chemicals. Other species have complex mating rituals, at the end of which the male guides the female to his spermatophore, which is then taken into the genital opening by the female.

Pseudoscorpions can produce silk, associated with glands on the chelicerae. One use of silk is to produce an egg sac that the female uses to hold the eggs next to her abdomen. A dozen or more eggs may be deposited within the sac. The young pseudoscorpions may remain within the sac until they again molt or, as occurs with the house pseudoscorpion, will remain on the back of the mother for a period before they molt and ultimately leave to hunt on their own. Pseudoscorpions will usually then molt two more times during the course of a year before they are fully grown. They may be fairly long-lived, with some known to live 2-3 years, and remain dormant within a silken cocoon during winter.

Although their ability to move about is limited by their small size, pseudoscorpions can disperse long distances by catching a ride on a large insect. Hitchhiking pseudoscorpions simply grab onto a leg or other appendage of a passing insect and go along for the ride. Such transport of one species by another is known as **phoresy** and occurs with some other arthropods, such as mites, bot flies and blister beetles. The insects in Colorado that have most commonly been found to carry pseudoscorpions are large longhorned beetles known as pine sawyers (*Monochamus* spp).



Figure 2. Pseudoscorpion carried on body of a pine sawyer. (longhorned beetle). Photograph by

Related Species: Pseudoscorpions are considered to be more closely related to spiders (Araneae order) than to scorpions (Scorpiones order).

Table 1. Pseudoscorpions known to be present in Colorado, arranged by family. From *Pseudoscorpions of Colorado* by C. Clayton Hoff (1961)¹.

Chthoniidae

Kewochthonuius paganus Hoff

Mondochthonius montanus Chamberlin

Lechytia pacifica (Banks)

Neobisiidae

Neobisium vancleavei Hoff

Microbisium parvulum (Banks)

Microbisium confusum Hoff

Microcreagris sp.

Syarinidae

Chitrella transversa (Banks)

Garypidae

Larca notha Hoff

Olpidae

Neoamblyopium alienum Hoff

Pseudogarypinus marianae (Chamberlin)
Pseudogarypinus giganteus Hoff
Pseudogarypidae
Pseudogarypus bicornis (Banks)
Cheiridiidae
Apocheiridium stannardi Hoff
Chernetidae
Lamprochernes oblongus (Say)
Lamprochernes ellipticus Hoff
Lamprochernes minor Hoff
Lustrochernes grossus (Banks)
Hesperochernes canadensis Hoff
Hesperochernes utahensis Hoff and Clawson
Acuminochernes tacitus Hoff
Dinocheirus validus (Banks)
Dinocheirus athleticus Hoff
Dendrochernes crassus Hoff
Cheliferidae
Chelifer cancroides (L.) (**house pseudoscorpion**)
Parachelifer persimilis (Banks)
Hysterochelifer proprius Hoff
Haplochelifer philipi (Chamberlin)
Dactylochelifer silvestris Hoff

¹ Hoff, C. C. 1961. Pseudoscorpions from Colorado. Bull. American Museum of Natural History Volume 122: 409-464.