

Colorado Arachnids of Interest

Jumping Spiders

Class: Arachnida (Arachnids)

Order: Araneae (Spiders)

Family: Salticidae (Jumping spiders)

Identification and Descriptive

Features: Most jumping spiders that are noticed are small to moderate size (ca 4-12 mm) somewhat fuzzy looking spiders. The cephalothorax (area containing head and legs) is longer than wide but the abdomen can vary from a rounded shape to being quite elongate.



Figure 1. The bold jumper, *Phidippus audax*.

Among the jumping spiders are some of the most brightly colored and boldly patterned of all spiders. General coloration often is black, brown, or gray but bright red or orange species also are found in Colorado. Commonly encountered species also have bright patches that may be red, yellow, metallic blues or greens, copper, gold or silver. In the genus *Phidippus*, metallic greens or blues also may be present on the chelicerae that support the jaws. Patterning and coloration is particularly striking among males and there can be great differences in appearance of the sexes as well as between different life stages. Patterning is also variable within a species, often making it difficult to identify species based on body appearance and colors.



Figure 2. Head of *Phidippus audax* (bold jumper) showing large anterior median eyes and metallic colored chelicerae.

However, not all jumping spiders have gaudy markings. Some species blend well with bark or grass backgrounds while others are mimics of beetles or ants.

The eye pattern of jumping spiders is very distinctive. The 8 eyes may be in either 3 or 4 rows but the front pair (anterior median eyes) are enormous and directed forward.

Distribution in Colorado: At least 45 species of jumping spiders are present in Colorado (Table 1) and representatives occur throughout the state. Some of the common species often enter



Figure 3. *Salticus scenicus* (zebra jumper), a jumping spider that often enters homes.



Figure 4. A *Platycryptus* species of jumping spider.



Figure 5. One of the red-marked species of *Phidippus* that occur in Colorado, perhaps *P. cardinalis*.

homes, including the ubiquitous species *Phidippus audax* (bold jumper), *Sitticus fasciger*, *Salticus scenicus* (zebra jumper), and *Platycryptus* species.

Life History and Habits: Jumping spiders hunt as stalkers. Their smaller eyes along the side of the head detect movement, causing the spider to turn the very large anterior median eyes towards the object of interest. Possessing the best vision of any spiders, and possibly the best vision of any arthropod, they're able to detect shapes, color, and depth of field. Some species can also detect ultraviolet, useful in recognition of mates or rivals.

Jumping spiders will slowly approach their prey, then rapidly jump to subdue and capture it. (This prey capture habit is often likened to the pouncing of a cat.) The jump may cover a distance several times their body length. Jumping spiders do not have unusually enlarged and muscular legs as is found in jumping insects - instead, their movement is achieved by rapid changes in hydraulic pressure of the blood. Muscular contractions force fluids into the hind legs, which cause them to extend extremely quickly.

Unlike most spiders, many jumping spiders will remain in place and turn towards a human or some other potential threat when it is detected. They may even approach it rather than flee for cover, an unusually curious type of behavior among spiders. However, jumping spiders are not aggressive and attempt to bite only if confined. The jaws of most species are too small to pierce the skin, but if successful, a jumping spider bite produces only mild and temporary pain with no complications. (However, *all* spider bites that do draw blood should be disinfected to avoid secondary infections by bacteria.)

A one-year life cycle is typical of jumping spiders. The most common species spend the winter as a nearly full-grown but still immature stage; some other species mature in fall. During the cold

months they are usually found in a silken retreat that they construct in sheltered sites. The spiders mature in spring; males usually mature a couple of weeks before females.

In species that regularly mature before winter, mating occurs in fall and the females survive until the next spring. Males of these species die in fall. Other jumping spiders have life cycles that are indistinct and all life stages of these are found throughout the year.

Elaborate courtship rituals occur among the jumping spiders and the bright markings of the males may be central in these ritualized behaviors. After mating and maturation of eggs, the female constructs a silken retreat where she will produce an egg sac. She remains with the eggs until the spiderlings hatch and disperse. After they have left she may produce additional egg sacs during the summer.

In addition to crawling, the tiny spiderlings engage in long distance dispersal by ballooning. This is achieved by producing a silken line to catch winds that carry the spiders. When crawling and hunting jumping spiders also use silk to produce a dragline that is periodically attached to a solid surface. This allows them to recover if they fall.

Some *Phidippus* species of jumping spiders present in Colorado.



Table 1. A Checklist of jumping spiders known from Colorado. *Primary source:* Denver Museum of Nature and Science Spider Survey Database (<http://www.dmns.org/spiders/spiderlist.aspx>), accessed October 24, 2008

<i>Eris militaris</i>	<i>Eris rufus</i>
<i>Evarcha hoyi</i>	
<i>Habronattus americanus</i>	<i>Habronattus brunneus</i>
<i>Habronattus clypeatus</i>	<i>Habronattus cockerelli</i>
<i>Habronattus cognatus</i>	<i>Habronattus conjunctus</i>
<i>Habronattus cuspidatus</i>	<i>Habronattus festus</i>
<i>Habronattus hirsutus</i>	<i>Habronattus venatoris</i>
<i>Metacyrba arizonensis</i>	<i>Metaphidippus</i> sp.
<i>Mexigonus arizonensis</i>	
<i>Pelegrina aeneola</i>	<i>Pelegrina flavipes</i>
<i>Pelegrina furcata</i>	<i>Pelegrina galathea</i>
<i>Pelegrina montana</i>	<i>Pelegrina peckhamorum</i>
<i>Pelegrina proterva</i>	<i>Pelegrina verecunda</i>
<i>Pellenes</i> sp.	<i>Phanias monticola</i>
<i>Phiddipus apacheanus</i> (Apache jumping spider)	<i>Phiddipus asotus</i>
<i>Phidippus audax</i> * (bold jumper)	<i>Phidippus cardinalis</i> (cardinal jumper)
<i>Phidippus clarus</i>	<i>Phidippus johnsoni</i> (Johnson jumper)
<i>Platycryptus californicus</i> *	<i>Platycryptus undatus</i>
<i>Pseudicius siticulosus</i>	<i>Salticus scenicus</i> * (zebra jumper)
<i>Sassacus papenhoei</i>	<i>Sassacus vitis</i>
<i>Sitticus fasciger</i> *	<i>Sitticus finschi</i>
<i>Sitticus floricola</i>	
<i>Synageles occidentalis</i>	<i>Talavera minuta</i>
<i>Thiodina</i> sp.	<i>Tutelina</i> sp.

* Species of jumping spiders that are most commonly found in homes