

Colorado Arachnids of Interest

Funnel Weaver Spiders (Funnel-web weavers, Grass spiders)



Figure 1. Female grass spider on sheet web.

Class: Arachnida (Arachnids)

Order: Araneae (Spiders)

Family: Agelenidae (Funnel weaver spiders)

Identification and Descriptive Features: Funnel weaver spiders are generally brownish or grayish spiders with a body typically ranging from 1/3 to 2/3-inch when full grown. They have four pairs of eyes that are roughly the same size. The legs and body are hairy and legs usually have some dark banding. They are often mistaken for wolf spiders (Lycosidae family) but the size and pattern of eyes can most easily distinguish them. Like wolf spiders, the funnel weavers are very fast runners.



Figure 2. Adult female of a grass spider, *Agelenopsis* species.

Males of this genus have a unique and peculiarly coiled structure (embolus) on their pedipalps (Figure 3), the appendages next to the mouthparts.

Hololena species often have similar appearance but lack the elongated spinnerets and male pedipalps have a normal clubbed appearance. Spiders within both genera usually have dark longitudinal bands that run along the back of the cephalothorax and an elongated abdomen.

Tegenaria domestica and *Eratigena agrestis* have blunter abdomens. These may be marked with gray or

black patches. Dark bands may also run along the cephalothorax, which is reddish brown with yellowish hairs in the species *Tegenaria domestica* (Figure 4). The four pairs of eyes are



Figure 3. Male of a grass spider (*Agelenopsis* species). Note the large pedipalps at the front of the cephalothorax.



Figure 4. Female of the common house-infesting funnel weaver *Tegenaria domestica*

arranged in two, slightly curved rows, which is a more orderly arrangement than found on other funnel weaver spiders.

Distribution in Colorado: Nineteen species of funnel weaver spiders are known from Colorado (Table 1) and representatives can be found throughout the state. These are usually the most common spiders found in homes in Colorado. For example, in a 2001-2002 survey of spiders caught indoors on sticky panels in Boulder, eastern Weld, and Larimer counties, over 37% were funnel weaver spiders, with *Tegenaria domestica* the single most common species collected. *Tegenaria domestica* (aka “barn funnel weaver”) is probably the most widely distributed species within Colorado, although it is native to Europe. Other funnel weavers common along the Front Range and West Slope are *Agelenopsis oklahoma* and *Hololena hola*. Additional species that are particularly common in eastern Colorado include *Agelenopsis pennsylvanica* and *A. aperta*.

Table 1. Checklist of funnel weaver spiders (Agelenidae) known from Colorado, with county records. This checklist is derived from the Denver Museum of Nature and Science Spider Survey Database (<http://www.dmns.org/spiders/spiderlist.aspx>) and The Nearctic Spider Database (http://www.canadianarachnology.org/data/canada_spiders/).

<i>Agelenopsis aleenae</i>	(Las Animas)
<i>Agelenopsis aperta</i>	(Douglas, Arapahoe, Jefferson, Denver, Larimer, Adams, Elbert, El Paso, Montezuma)
<i>Agelenopsis emertoni</i>	(Douglas, Denver, Jefferson, Montezuma)
<i>Agelenopsis longistyla</i>	(Summit, Saguache, Conejos, Alamosa)
<i>Agelenopsis naevia</i>	(Boulder)
<i>Agelenopsis oklahoma</i>	(Weld, Larimer, Douglas, El Paso, Boulder, Teller, Montrose, Delta, Mesa)
<i>Agelenopsis pennsylvanica</i>	(Jefferson, Denver, Adams, Boulder, Larimer, Weld, Douglas, Arapahoe, Yuma)
<i>Agelenopsis potteri</i>	(Jefferson, Adams, Larimer, Denver, Douglas, Washington, Montezuma)
<i>Agelenopsis spatula</i>	(Cheyenne, El Paso)
<i>Agelenopsis utahana</i>	(Boulder, Larimer, Jefferson, Denver, Gilpin, Las Animas, Grand, Montezuma)

Calilena gertschi (Montezuma)
Calilena restricta (Mesa)

Hololena hola (Larimer, Jefferson, Boulder, Douglas, Arapahoe, Denver, El Paso, Las Animas, Garfield, Mesa, Delta, Montezuma, La Plata)

Hololena nevada (Larimer)

Hololena oquirrhenis (Mesa, Montrose, Delta)

Novalena lutzi (Boulder, Douglas, Garfield)

Tegenaria domestica (**barn funnel weaver**) (Larimer, Boulder, Jefferson, Arapahoe, Adams, El Paso, Otero, Denver, Douglas, Cheyenne, Chaffee, Jackson, Montezuma, Delta, Montrose, Garfield, Routt)

Eratigena agrestis (**hobo spider**) (Boulder, Denver, Douglas, Jefferson, Adams, Arapahoe)

Eratigena duellica (**giant house spider**) (Douglas)

Life History and Habits: Funnel weaver spiders capture prey with a horizontal sheet web, constructed of thick silk (Figure 5 and 6). In one corner of the web is a narrow funnel “retreat,” which is often out of sight extending into a protective recessed area. The web is not sticky but usually includes vertical strands that can help impede passing insects.

The spiders spend much of their time at the entrance of the retreat. They rush out rapidly to capture insect prey that may land on the sheet web and become temporarily entangled. Once subdued, the prey may be eaten at the point of capture or dragged back into the area of the retreat where it is alternately crushed with the jaws (chelicerae) and sucked dry of fluids.

The most common funnel weavers found outdoors are the “grass spiders” of the genus *Agelenopsis*. These often construct their webs in dense grass or mulch and the webs become very conspicuous in the morning dew. Low growing dense shrubs, notably junipers, are also areas commonly used for web building by grass spiders. When webs are constructed within or on buildings or on outdoor furniture the web is constructed around some crack or recessed area that the spider can use for the retreat. Nesting within buildings is almost always produced by *Tegenaria domestica*.

Life history varies a bit among the funnel weavers that occur in Colorado. The grass spiders (*Agelenopsis*) appear to have a one-year life cycle, with eggs being the overwintering stage. Immature stages then develop in spring and summer. However, the appearance of adult stages



Figure 5. Sheet web produced in long grass



Figure 6. Sheet web produced in a juniper shrub

during the year can vary. For example, males of *Agelenopsis aperta* are most abundant in June, July, and August suggesting that they mature early in the year. *Agelenopsis pennsylvanica* matures later, with males being found from August-October with a September peak. Numbers of adult females also peak in late summer and early autumn. Both sexes of this species frequently move into homes with cooler weather in late summer, but do not successfully establish within buildings and all die out by winter. The egg sacs produced by these spiders are lens shaped and are tucked into the area of the retreat.

The life cycle of *Hololena hola* is less clear. Adult males are primarily present in September and October, although a few are seen in spring and early summer. Adult females are present year round, suggesting that life cycles extend more than one season and overlap. When found in homes the great majority of this species are males.

A life cycle that extends over more than one year is common with *Tegenaria domestica*. Both immature and adult stages can be found surviving the winter months and continuous breeding may occur within buildings. Peak numbers of adult males are present in June and July, indicating mating occurs at this time. Egg sacs are may be suspended about the web. In captivity they have been reported to live up to seven years and produce up to nine egg sacs.



Figure 7. Hobo spider (*Eratigena agrestis*), female.

Issues involving potential medical importance and misidentification of funnel weaver spiders

There are a great many issues that are associated with funnel weaver spiders because of their brownish coloration, common occurrence in homes, and their name.

Although they are probably most often mistaken for wolf spiders due to their appearance, their presence in the home and brownish coloration most often raise concerns whether they are brown recluse spiders.

However, funnel weavers can be easily distinguished from brown recluses by several features including patterning of the abdomen, banding on the legs, and hairiness of the body and legs, among other characters. A more extensive discussion of identification features is included in the Extension Fact Sheet (5.607) *Brown recluse spiders in Colorado: Recognition and spiders of similar appearance*

(<http://www.ext.colostate.edu/pubs/insect/05607.html>).

The common name “funnel weaver” or, particularly “funnel-web weaver,” also is a source of potential confusion. This is because there is another family of very different spiders known as “funnelweb spiders” (Hexathelidae family) which make a tubular web retreat. One member of this family is the notorious “Sydney funnelweb spider” (*Atrax robusta*), an



Figure 8. Underside markings of a female hobo spider (*Eratigena agrestis*) female.

Australian species with a dangerous bite that has been associated with some human deaths. No species from this family of spiders occur in Colorado.

Yet another issue involves a species of funnel weaver spider that fairly recently became established in North America, the hobo spider (*Eratigena agrestis*) (Figure 7, 8). This is often the most common spider found in homes in Europe where it is considered harmless to humans. However, early in its discovery in the United States a report was published that purported to link the bite of this spider to serious necrotic skin wounds, similar to that produced by brown recluse spider. This report got extremely wide public attention, creating a small panic about this spider. However, this original report has since been thoroughly discredited. The data on bites (with rabbits) has not been replicated despite attempts to do so and venom associated with necrotic skin wounds has not been found in the venom glands of this spider species. The skin wounds reported of humans in the original report were solely anecdotal and are now believed to have been caused by secondary infection, perhaps by the bacteria methicillin resistant *Staphylococcus aureus*. The latter, known by the acronym MRSA, is now recognized as such a common cause of poor healing skin wounds that it is often referred to as “false spider bite diagnosis.” The hobo spider is now considered to be harmless to humans in North America, as throughout its range.