

HOBO SPIDER

Integrated Pest Management in and Around the Home

The hobo spider, *Tegenaria agrestis*, is a European immigrant that has only been implicated as a potentially poisonous spider in the United States since the 1980s (Fig. 1). Another name commonly used for this spider is the aggressive house spider (although this spider is not aggressive). However, in seeking name stability, the American Arachnological Society has chosen “hobo spider” as the spider’s official common name. The name “hobo” is linked to the spider’s presumed spread to distant cities via the railways.

The hobo spider does not live in California and has never been documented in the state. There are many cases, however, of common related spiders being misidentified as hobo spiders by the general public and even by pest control operators. In North America, this spider lives in the Pacific Northwest from British Columbia east to Montana, Wyoming and Colorado and south through Oregon and northern Utah, so it is conceivable that its range may extend into the northernmost areas of California. However, there have been no documented verifications by a qualified arachnologist (spider specialist) to date.

Although once common in Seattle, the hobo spider apparently is being competitively displaced by another European *Tegenaria* (TEJ-in-Er-ee-uh) species so that it is now difficult (but not impossible) to find hobo spiders in Seattle. Hobo spiders are more common further east and are easily found around Salt Lake City, Utah. Interest in this spider has been growing in California because it supposedly causes necrotic (rotting flesh) wounds similar to brown recluse bites, another spider that does not occur in California. (For more information on the brown recluse, see *Pest Notes: Brown Recluse and Other Recluse Spiders*, listed in “Suggested Reading.”) Some

members of the California medical community have read about the hobo spider and the effects of its venom and have started to diagnose hobo spider bites without proof of the spider. The purpose of this Pest Note is to offer current information on the status of the hobo spider in California.

IDENTIFICATION

The hobo spider is a member of the spider family Agelenidae, a common group that has many species throughout California and the United States. Agelenid spiders can have very dense populations in certain habitats. The members of this family construct a snare referred to as a funnel web, which is a trampolinelike, horizontal web constricting back into a funnel or hole (Fig. 2). The web is typically found in a crack between bricks or under wood, stones, or vegetation. The spider waits in the mouth of the funnel for prey to fall onto the horizontal surface, and then it rushes out, grabs the prey, and takes it back to its funnel to consume. If you go outside on a dewy morning, you can often see many of these funnel webs.

The hobo spider shares traits with many of its relatives in the Agelenidae family, including coloration and web-building characteristics. It is a brown spider about $\frac{1}{4}$ to $\frac{5}{8}$ inch in body length and lives in a funnel web. There are dozens of similar looking spider species in California that build funnel webs, including members of the genera *Agelenopsis* (2 species), *Calilena* (13 species), *Hololena* (21 species), *Novalena* (4 species), and *Rualena* (8 species). There is even a unique wolf spider genus, *Sosippus* (1 species), in California that, unlike its free-hunting relatives, builds a funnel web. Therefore, if you see a funnel web in California, there are many other spiders you should suspect before even considering the hobo spider

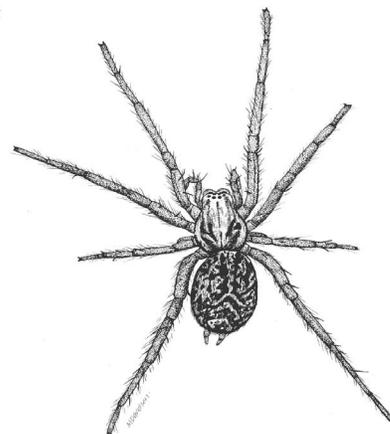


Figure 1. The hobo spider, *Tegenaria agrestis*, does not live in California.

as a possibility. None of these species causes necrotic wounds or serious injury to humans.

To distinguish funnel-weaving spider species, the arachnid’s reproductive structures must be examined, a task that requires the skills of a qualified arachnologist. Each spider species has a distinctive “lock and key” design of the male and female reproductive organs. Through evolution, the physical features of the males and females have become unique for each species and hence are used by arachnologists for

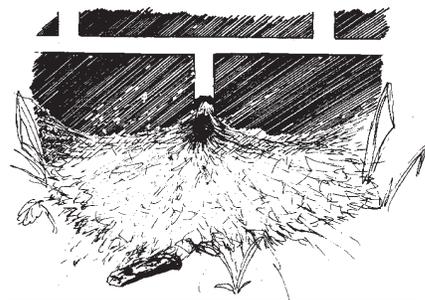


Figure 1. Funnel web of an agelenid spider between bricks in a wall. Note hole at top, where spider often waits.

species differentiation. Until someone has examined reproductive features on dozens of hobo spiders and also related species, it is unlikely that a hobo spider would be correctly identified with the naked eye. Therefore, virtually any "hobo spider" identification by a non-arachnologist in California should be suspect.

If you have access to a magnifying device (hand lens, microscope, etc.), there is an easy way to determine if the spider you have IS NOT a hobo spider. First, the spider must be associated with a funnel web; otherwise it could easily be one of the hundreds of other non-agelenid spider species in California. All funnel-weaving spiders have eight eyes arranged in two rows. If you look at the spider head on, however, most of the agelenid spiders in California have their two rows of eyes curved so strongly that it appears that their eyes are actually in three horizontal rows with four eyes in the middle row with two eyes above and two eyes below this row (Fig. 3a). This is known as the 2-4-2 eye pattern. Exceptions are the spiders of the genus *Tegenaria*, which have eyes that are in the more common pattern of two rows of four (Fig. 3b). This is also the most common eye pattern for spiders in general, and unless you remove the spider from a funnel web, it will probably not be a funnel-weaving spider.

Nonetheless, it is not uncommon to find a funnel-weaving spider with two straight rows of eyes in California. There are two species of *Tegenaria* in the state, *T. pagana* and *T. domestica*. Neither species is native to the United States. Their coloration is similar enough to that of the hobo spider, *T. agrestis*, that anyone except a spider expert might confuse them with the hobo spider. *Tegenaria pagana* is found in coastal California regions to slightly inland. *Tegenaria domestica*, however, is an extremely common spider, about $\frac{1}{4}$ to $\frac{1}{2}$ inch in body length, found throughout California often inside homes, as is evident by the name "domestica." In fact, *T. domestica* is found throughout the world, having been carried by commerce. Neither of these spiders is considered poisonous

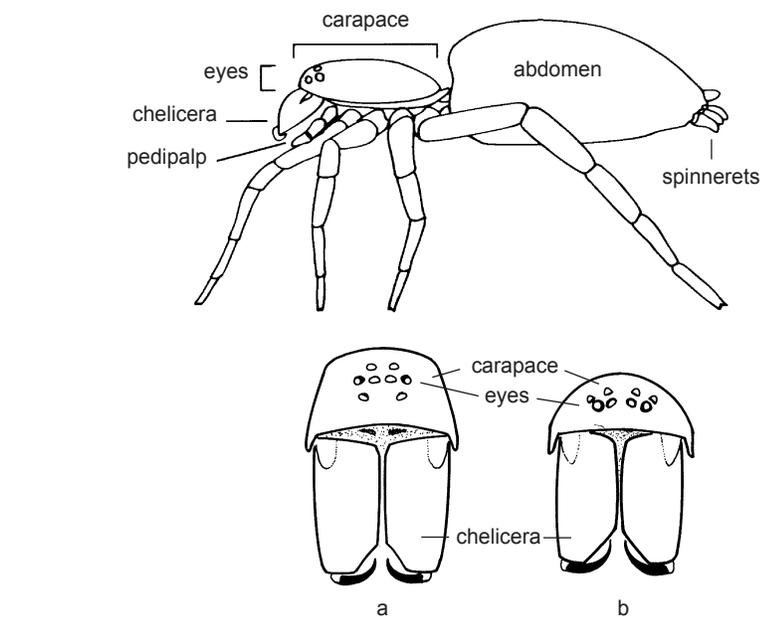


Figure 2. (Top) Side view of spider body. Closeups show face of (a) an agelenid spider, *Agelenopsis aperta*, with eyes in three rows; and (b) the hobo spider, *Tegenaria agrestis*, with eyes in two rows.

to humans even though they are closely related to the hobo spider.

MEDICAL ASPECTS

Hobo spiders have been reported to have a bite that can leave a necrotic (i.e., rotting flesh) wound that progresses over several days—similar to that caused by a brown recluse bite. Another reported characteristic symptom of hobo spider bites is a headache that persists for 2 to 7 days and does not abate with analgesics (pain relievers).

In its native European habitat, the hobo spider venom is not considered poisonous to humans. A research study (still unpublished) was undertaken to compare hobo spider venom from both Pacific Northwest and European hobo spider populations. The venom from both populations was injected into the same strain of rabbits used in the initial research that implicated hobo spiders as potentially poisonous to humans. Neither venom in the study produced necrotic wounds in the rabbits.

Additionally, an editorial in the *Annals of Emergency Medicine* in 2004 examined the medical literature on hobo spider

bites and found that there is only one case of a verified bite by a hobo spider that resulted in a necrotic skin lesion and this was in a person who had a pre-existing medical condition that also leads to necrotic skin lesions. Most of the basis for blaming the hobo spider is based on extrapolation from venom experiments with rabbits. As important as these experiments are, one must keep in mind that there are differences in animal response to spider venoms. As an example, brown recluse spider venom causes skin lesions in humans, rabbits, and guinea pigs, but not mice or rats; Australian funnel web spiders are highly toxic to primates but not other mammals. Therefore, until a study is done with a series of verified bites of hobo spiders in humans resulting in skin lesions, it is more sensible to question the potential of hobo spider to cause skin lesions rather than to make the mistake of emphatically stating that it is a dangerous spider. The definitive proof is still lacking.

If you do get a necrotic wound in California, you and your medical professional should consider many other common causes to be much more prob-

able than a bite from a hobo or brown recluse spider. If an arthropod is involved at all, one should first consider all those creatures that seek out mammals for blood meals and may cause necrotic-type wounds. These include mites, fleas, bed bugs, soft ticks, hard ticks, conenose bugs, and kissing bugs (see *Pest Notes on Fleas, Bed Bugs, Conenose Bugs, and Lyme Disease in California* listed in the "Suggested Reading"). In addition there is a long list of medical conditions and diseases that exhibit necrotic-type wounds. A few of these are *Staphylococcus* and *Streptococcus* bacterial infections; lymphomatoid papulosis (a non-Hodgkin's disease lymphoma); diabetic ulcer; pyoderma gangrenosum; infected herpes simplex; herpes zoster ("shingles"); and Lyme disease. Any and all of these situations are more likely than the bite of a hobo spider in California.

MANAGEMENT

Because the hobo spider is not known to live in California, there is no need for control. However, reducing trash and rubble around the house and sealing windows and door jams will help to reduce the numbers of most spiders and other arthropods that can gain access into the home. In the garage (a well-known haven for spiders), use plastic bags tightly closed to store all gardening apparel (gloves, old shirts, boots) and sports gear (baseball mitts, roller skates) that is used only sporadically. Remember that this will minimize encounters with spiders, but not eliminate them completely.

Typically, pesticide control of spiders is difficult unless you actually see the spider and are able to spray it. There are various insecticides available in retail outlets labeled for spider control. It is just as easy and much less toxic to crush the spider with a rolled up newspaper or your shoe. Sticky traps placed along floorboards out of the reach of pets and young children offer a noninsecticidal way to trap spiders as well as provide an idea of population levels in the structure. You can also remove a spider from your home by placing a jar over it and slipping a piece of paper under the jar that then seals off the opening of the jar

when it is lifted up. If you plan to send the spider to an expert for identification, try to keep it in an undamaged condition because a crushed specimen may be difficult to identify.

SUGGESTED READING

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Produced by IPM Education & Publications, UC Statewide IPM Program, University of California, Davis, CA 95616-8620

This Pest Note is available on the World Wide Web (www.ipm.ucdavis.edu)



This publication has been anonymously peer reviewed for technical accuracy by University of California scientists and other qualified professionals. This review process was managed by the ANR Associate Editor for Pest Management.

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This material is partially based upon work supported by the Extension Service, U.S. Department of Agriculture, under special project Section 3(d), Integrated Pest Management.

WARNING ON THE USE OF CHEMICALS

Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Confine chemicals to the property being treated. Avoid drift onto neighboring properties, especially gardens containing fruits or vegetables ready to be picked.

Do not place containers containing pesticide in the trash or pour pesticides down sink or toilet. Either use the pesticide according to the label or take unwanted pesticides to a Household Hazardous Waste Collection site. Contact your county agricultural commissioner for additional information on safe container disposal and for the location of the Household Hazardous Waste Collection site nearest you. Dispose of empty containers by following label directions. Never reuse or burn the containers or dispose of them in such a manner that they may contaminate water supplies or natural waterways.

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