

# “The Brown Recluse Spider”

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Until the 1950s the brown recluse spider, *Loxosceles reclusa*, was ignored or unknown to the general public in the United States. As early as 1929, a Kansas physician, Dr. L.R. Schmaus, published a case report in the *Journal of the American Medical Association* describing the bite of a spider identified as *Loxosceles*. In 1947, a Puerto Rican scientist described the bite of *Loxosceles laeta*, a South American relative of our brown recluse. The occasional occurrence of a necrotic skin lesion prompted a study by Missouri physicians and scientists at the University of Missouri in 1957. These studies revealed that the bite of the brown recluse caused the large, slow-healing open sore referred to as necrotic spiderbite, necrotic arachnidism (=loxoscelism), or gangrenous spot mentioned in medical literature as early as 1872. In recent years more information on the recluse became available to the public because of research at universities and other institutions in Missouri, Oklahoma, Illinois, Arkansas, and Georgia.

## Spiderbites

Despite the large number of brown recluse spiders in some midwestern areas, the number of confirmed cases of necrotic spiderbite is relatively small. Many people have lived in houses infested with this species for years and have not been bitten by it because it is extremely shy and non-aggressive. If a person is bitten, however, it is important that the symptoms be recognized and that, if at all possible, the spider be saved for positive identification.

Reactions to the bite may range from a mild skin irritation to a large slow-healing open sore, depending on the intensity and duration of the bite. One may or may not feel the actual bite. Generally, within one to eight hours after the bite, the site becomes swollen and painful. After about twenty-four hours, the area around the bite turns purple. The cells of the skin turn black as they die and start to slough away in the next few days. The sloughing off of dead cells continues for several weeks, usually leaving an open pit-like sore the size of a dime or larger and often exposing underlying muscles. As the wound heals, it fills with scar tissue. Healing may take several months. Such severe local reactions have occurred in a minority of documented cases. In strong reactions, there may be a rash, fever, nausea, and abdominal cramps. In a few extreme cases there has been destruction of many red blood cells, signaled by bloody or dark-colored urine.

## Treatment

No antivenin is yet available in the United States, but medications are available to treat them and to promote healing. (\*Addendum: Some include antibiotics (oral and/or IV),

steroids (usually prednisone), and Dapsone. Shock treatment, hyperbaric oxygen therapy and nitroglycerine patches are used to promote healing.) Bites that receive treatment within the first 24 – 48 hours usually heal more rapidly and with fewer serious effects.



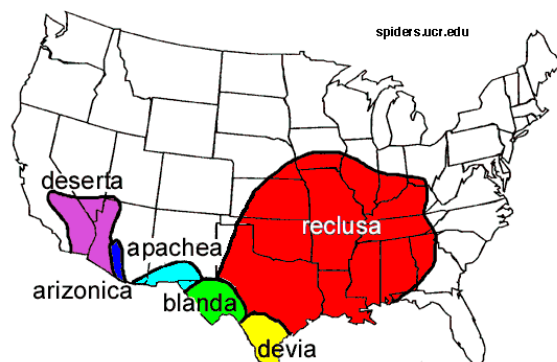
### Identification of Brown Recluse Spiders

With some knowledge of spider anatomy and a few specific characteristics of the brown recluse, this species is relatively easy to identify. All spiders have eight legs and a body that is divided into two main parts. The front part or cephalothorax is the more flattened part of the body and has the legs attached to it. The abdomen is sac-like and attached at the rear of the cephalothorax. The eyes, long pedipalps, and the mouthparts are on the front of the cephalothorax.

The brown recluse spider is a delicate-looking, medium-sized spider. When adult its long, dark brown legs extend past an area the size of a half-dollar. The body is three-eighths to one-half inch in length. One of the easiest and best characteristics to use in identifying the brown recluse is the dark violin-shaped mark on the upper side of the light brown or yellowish-brown cephalothorax. The large end of the violin mark is at the head end of the cephalothorax, and the neck or stem of the violin mark points toward the abdomen. Using magnification, the head region can be seen to have *six* eyes instead of eight as in most spiders. It is also important to note that the brown recluse has a dark brown or charcoal-brown abdomen *with no stripes or spots*. Young spiders usually have lighter coloration. A spider having all of the above characteristics should be suspected of being the brown recluse and should be handled with care. Positive identification can usually be made at a state public health office or pest control company.

### Distribution of the Brown Recluse

The brown recluse is commonly found in Missouri, the southern half of Illinois, Kentucky, the eastern two-thirds of Kansas, Oklahoma, Tennessee, Texas, Louisiana, Mississippi, and northwestern Alabama. The spider also occurs in fewer numbers in Nebraska, Iowa, Indiana, and Ohio. Occasional specimens have been found in California, Arizona, Wyoming, Pennsylvania, New Jersey, North Carolina, and Florida. These “strays” were probably introduced accidentally by way of luggage or household furniture brought from the Midwest.



Range of recluse (genus *Loxosceles*) spiders in the United States

Rick Vetter, University of California Riverside

In the southern part of its distribution the brown recluse is often found outside under rocks and beneath bark. In the northern states, this spider is commonly found in houses, storage sheds, barns, and warehouses. Favorite hiding places are in seldom-used clothing hanging in dark closets, in collections of magazines and papers, on the underside of furniture, in cracks and spaces around baseboards, around window and door facings, and in dark cellars. Documented cases indicate that most victims were bitten after they had put on clothes that had been stored in a secluded closet, while they were cleaning closets or storage areas, or when they rolled over on a spider in bed. Biting usually occurs when a spider is pressed against bare skin.

### **Life Cycle**

Recent studies of the biology of the brown recluse provide us with information pertinent to control by the homeowner. In the laboratory, mating has been found to occur from February to October. Greatest egg production occurs from May to August. One female may produce as many as 300 eggs, depositing them in several cases throughout the season. Each case is a white silken sphere about one-third inch in diameter, which the spider leaves in a sheltered place. Only about 50% of the young can be expected to survive. Depending on the availability of adequate food and mild temperatures, the young reach maturity in seven to eight months. They may live for several years and, under some conditions, can survive for six months or more without food and water.

The brown recluse is a hunter, emerging from its hiding place at night in search of small insects for food. The small, loose, irregular web is not usually used for trapping insects.

### **Control of Spiders in their Illinois Habitat**

In Illinois the buildings that are often infested with a large population of spiders are old houses and warehouses in cities, old farmhouses, and poorly constructed dwellings that have cracks and spaces through which spiders can enter for shelter. It is difficult to control spider populations in old dwellings that have surrounding reservoirs such as old storage buildings and barns.

The homeowner can do much to control these spiders by thorough, periodic housecleaning. It is best to use a vacuum cleaner to clean storage rooms, closets, under and behind furniture, and behind pictures and mirrors. All unnecessary articles should be removed from attics, cellars, and closets. The removal of insects and other arthropods from the house also aids in controlling the brown recluse because it depends on insects and other related organisms for food.

In houses where spiders are abundant, chemical control may be necessary. In places with little or no air circulation, such as closets and chests, DDVP resin strips or paradichlorobenzene flakes or crystals are effective. Closets and other areas suspected of sheltering spiders may be spot-treated with residual sprays of 2% Baygon, 0.5% diazinon, 0.5% dieldrin, or 3% malathion. Attics, crawl spaces, wall voids, and other unused areas are best treated with 5% silica aerogel. It is best to consult specialist and take care in the use of chemicals.

<http://department.monm.edu/biology/recluse-project/index.htm>

This Monmouth College project's Website gives more information about the Brown Recluse in northern Illinois.