ENTO-PU-032 05/22

SCORPIONS

Wizzie Brown*

Scorpions are arachnids, close relatives of ticks, mites, and spiders. They are easily recognized by their characteristic shape. Scorpions prefer dry habitats but occur throughout Texas. They can be a nuisance when they interact with humans because they sting when disturbed.

DESCRIPTION

A scorpion's body becomes more slender toward the end and has a five-segmented tail that can be arched over the back. On the end of the tail is a bulb-like poison gland or stinger. Scorpions have four pairs of legs and two large, pincer-bearing pedipalps in front. Scorpions are well-equipped to defend themselves or attack prey with their pincers and stinger. Between the last pairs of legs are comb-like structures called pectines, which are sensory organs used to sense surface textures and detect prey.

Scorpions have two eyes on the top of the head and usually two to five pairs of eyes along the front corners of the head. They do not see well, however, and must rely on the sense of touch, using their pectines and other organs for navigation and detecting prey. They have a well-developed sense of hearing. Worldwide, scorpions range in size from ½ inch to 7¼ inches long (including the tail), depending on the species.

The most common species in Texas is the striped bark scorpion, *Centruroides vittatus* (Fig. 1). Adults are about 2½ inches long. Striped bark scorpions are yellowish tan with two broad, dark stripes running the length of the back and a dark triangular mark on the front of the head above the eyes. Populations in the Big Bend area may be only faintly marked or completely pale. Immature striped bark scorpions may be lighter in color. In young scorpions, the base of the pedipalps and the last segment behind the abdomen are dark brown or black. This species can be identified easily by its slender pedipalps (pincer-bearing arms) and long, slender tail. The tail is longer on males than females.

Figure 1. Striped bark scorpion.

BIOLOGY

Scorpions are nocturnal, hiding during the day and becoming active at night. This behavior helps them manage temperature and water balance, which are important functions for survival in dry habitats. Many species dig burrows in the soil. Their bodies are flat, which allows them to hide in small cracks and under stones, bark, wood, or other objects on the ground. From these hiding places they wait or search for prey. Chief foods are small insects, spiders, centipedes, earthworms, and other scorpions. Once they capture their prey, they use their large pincers to crush and draw it toward the mouth so the prey's body juices can be ingested.

Some scorpion species may live for 20 to 25 years, but the typical life span is 3 to 8 years.

Adult scorpions may have several broods of young. Following an elaborate mating process that lasts 24 to 36 hours, the female undergoes a gestation period ranging from 5 months to more than 1 year. The young are born alive in semitransparent sacs. As soon as the young scorpions free themselves from these thin sacs, they climb onto their mother's back (Fig. 2).

*Extension Program Specialist–Integrated Pest Management
The Texas A&M System

Figure 2. Female scorpion carrying babies on her back.

Already capable of stinging, the young scorpions leave the mother after about 2 weeks and begin to fend for themselves. Scorpions reach maturity in a year or so, depending on the availability of food.

The striped bark scorpion mates in the fall, spring, or early summer and the gestation period lasts about 8 months. Females usually give birth to 13 to 47 young, with an average of 31. The immature scorpions molt 3 to 7 days after birth and remain on the mother for another 3 to 7 days. There are five or six molts to maturity. A striped bark scorpion lives for approximately 4 years.

TAXONOMIC STATUS

About 90 species of scorpions have been identified in the United States. Texas has 18 species, but only one, the striped bark scorpion, occurs throughout the state. It is the only species of scorpion found in the eastern part of Texas, whereas two species have been recorded near Austin, four near Amarillo, three near Abilene, five near Fort Stockton, eight in the Fort Davis region, eight near Langtry, and 14 in Big Bend National Park.

HABITAT

Scorpions are found in many types of habitats, including desert flats, sand dunes, desert and mesic mountains, grasslands, pine forests, deciduous forests, and chaparral. Species are most diverse in desert areas.

The striped bark scorpion can be found indoors or outdoors in a wide variety of habitats. It is often found under rocks or boards and in debris. Striped bark scorpions are active foragers that do not burrow and are distinctly associated with dead vegetation, fallen logs, and human dwellings. It is common for this scorpion to climb trees and walls, and they often are found in the attics of homes. During periods of hot weather, scorpions may move into living areas to escape the high temperatures in attics.

SCORPION STINGS

The sting of a scorpion may be painful or even deadly, depending on the species. Of the 1,500 species of scorpions worldwide, only about 20 to 25 are regarded as dangerous. A scorpion's venom is a mixture of compounds, including neurotoxins that affect the victim's nervous system. Stings from dangerous species may cause paralysis, severe convulsions, cardiac irregularities, breathing difficulties, and even death. Antivenins are available in areas where dangerous scorpions live.

The stings from Texas scorpions produce only moderate reactions in most people because the poison has little effect on the nervous system. Severity of the sting is dependent upon the individual scorpion and the person's reaction to the venom. A person who is stung by a scorpion should be watched closely for adverse reactions. As with any arthropod venom, allergic reactions are possible. An ice pack applied to the affected area will relieve some pain. If swelling and/or pain persists or if breathing difficulties occur, immediate medical attention is necessary.

SCORPIONS AS PETS

Scorpions have been kept as pets, but this practice is generally discouraged. Scorpions should never be kept indoors or around small children. Scorpions with even relatively low poison levels can produce fatal reactions in young children and also in adults who are allergic to the toxin.

MANAGEMENT

Scorpions are difficult to control with insecticides alone. Therefore, the first control strategy is to modify the area surrounding a structure.

- Remove all trash, logs, boards, stones, bricks, and other objects from around the structure.
- Keep grass closely mowed near the structure. Prune bushes and overhanging tree branches away from the structure. Tree branches can give scorpions a path to the roof.
- Store garbage containers in a frame that keeps them above ground level.
- Never bring firewood inside the structure unless it is placed directly on the fire.
- Install weather-stripping around loose-fitting doors and windows.

- Plug weep holes in stone or brick veneer structures with steel wool, copper mesh, pieces of nylon scouring pad, or small squares of screen wire. (Steel wool will rust when wet, so it should be used only on dark-colored facades.)
- Use sealant around roof eaves, pipes, and any other cracks into the structure.
- Keep window screens in good repair. Make sure they fit tightly in the window frame.

Naturally derived pesticides for managing scorpions include active ingredients such as rosemary oil, cinnamon oil, clove oil, thyme oil, peppermint oil, and pyrethrum. Naturally derived products generally degrade more quickly than synthetic pesticides so they may not provide a long residual control.

Synthetic pesticides for scorpion control may contain active ingredients such as permethrin, cyfluthrin, cypermethrin, lambda-cyhalothrin, deltamethrin, bifenthrin or carbaryl. Look for products containing these active ingredients or consult a pest control operator.

Apply pesticides around the foundation of the house and up to 1 foot above ground level on the exterior walls. Also apply pesticides around doors, window eaves, and other potential points of entry. Indoor treatments should be directed at potential points of entry, corners, cracks, and crevices where scorpions hide. Follow directions on the package for dosage, mixing, and application methods.

TIPS FOR PROFESSIONALS

- Wettable powder or microencapsulated formulations of perimeter sprays provide better residual control for crawling pests because they leave an even film along the foundation after the concrete has absorbed the water.
- When using pyrethroids or other insecticides labeled for scorpion control, be sure to use the highest permissible label rate.