

LivingWithBugs Guide

identification, life cycles and management

Spiders & Ticks

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Spiders (Fig. 1) and ticks are often treated together because they are related. Both groups have eight legs in all stages (except larval ticks which have only six legs). All spiders are predators – that is they hunt live prey. Some spiders are active hunters while others lie-in-wait for their prey to stumble into their webs. Ticks, on the other hand, are *obligate ectoparasites of vertebrate animals*. Ticks must feed on the blood of their host animals. Common tick hosts are birds, reptiles, and mammals (including humans).

The vast majority of spiders are harmless and avoid contact with us. They pose no threat to us what-so-ever. In fact, because spiders prey on small arthropods they can be considered beneficial. Despite this most people have an innate fear of spiders which often verges on phobia. Some believe that this fear is built into our genes. An excellent book (now almost 30 years old) advances this thesis. See *The Dragons of Eden - Speculations on the Evolution of Human Intelligence* by Carl Sagan (1977).



Figure 1. Harmless garden spider.

A few (very few) spiders are dangerous, however. Some are large enough to inflict deep, painful bites. Most spider bites are painless but may include a venom. Spider venoms are classified as either hemolytic (blood destroying) or neurotoxic (toxic to nerves). Those spiders that inject hemolytic toxins along with the bite cause localized wounds that are

slow to heal. Neurotoxic venoms are potentially more dangerous because they affect the central nervous system. For treatment of spider bites the medical community can refer to Wasserman, G.S. and P.C. Anderson. 1984. Loxoscelism and necrotic arachnidism. *J. Tox. - Clin. Tox.* (1983-1984). 21:451-472. And,

Goddard, J. 2002. *Physicians Guide to Arthropods of Medical Importance*. Fourth Edition.

Attempting control of spiders with insecticides is not very useful. If large numbers of spiders are found indoors look for a reason. Since spiders are predators (and need prey) look for infestations of other arthropods that might support a large spider population. An infestation of some pantry pest, for example, could support a larger than normal spider population indoors. Another control measure is sticky board traps for wandering indoor species. Finally, remove outdoor debris piles near the house.

Ticks (Fig. 2) never enter houses unless car-

ried in on us or our pets. Instead, ticks climb low vegetation and wait for their host to come into contact. Tick can remain on their host for hours or even days. They insert their mouthparts in order to get a blood meal. Feeding is usually painless. During feeding ticks (like mosquitoes) inject saliva that helps the blood flow. Tick saliva contains allergens that cause a raised, itchy area at the site.



Figure 2. Hard tick (enlarged).

Saliva can also harbor pathogens which may infect the host. See Table 1 for important tick-borne diseases. The most important point to remember about disease transmission is this – the chance that you'll get a disease from a tick bite is *directly related to how long the tick is allowed to feed*. The longer a tick feeds the greater the chance that transmission will occur. Therefore it is important to remove ticks as soon as they are found (see below).

Area-wide control of ticks is not usually practical. Instead concentrate on avoiding getting a bite in the first place and removing ticks that do manage to find you as quickly as possible. Repellents containing DEET (see our article about Repellents) are effective against ticks and should be used in areas where ticks are known to be active.

Table 1. Important Tick-Transmitted Diseases

Lyme disease
rocky mountain spotted fever
Siberian tick typhus
Boutonneuse fever
Tularemia
Colorado tick fever
Human tickborne ehrlichiosis
American babesiosis
Tick paralysis
Relapsing fever
Tick-borne encephalitis
Crimean Congo hemorrhagic fever
Kyasanur forest disease
adapted from Goddard, J. 1993. Physician's Guide to Arthropods of Medical Importance.

Tick removal. Bottom line –remove the tick as quickly as possible. Grasp tick behind the mouthparts, at the skin surface, and pull straight off. If tweezers are available use them to grab the tick. If tissue paper is available use it to protect your fingers in the event that the tick is crushed. Wash your hands and the bite area and apply an OTC antibiotic. Try not to squeeze the tick as this may inject saliva (and disease organisms) into the wound.

See www.LivingWithBugs.com for additional information.