



## A Sticky Business

Have you ever wondered why a spider does not get stuck in its own web? The tarsi (feet) of spiders have unique combs on the ends that allow the spider to bypass the sticky droplets on the web that are distributed at intervals along each strand. If the spider makes a misstep and accidentally touches one of these droplets, it has a special cutting mechanism that allows it to free itself.

Not all webs are sticky. The spinnerets (silk producing glands) can form several types of webbing for specific purposes. Some of the free living spiders that do not form elaborate catching webs form a dragline strand of silk as they move from place to place. The web is anchored at intervals, not unlike a mountain climber using a safety line and pitons to help him maneuver. This safety line is also used by the spider to retrace its steps if necessary.

Another type of web is released as a long filamentous line into the air on a warm breezy day. As the line is played out, the breeze stretches out the line and when the wind drag is strong enough, the spider releases its grip and sails off to a new location. This process is known as "ballooning". On a warm spring day you can see these gossamer threads sailing along in the air in fairly large quantities. These are usually new hatchlings trying to spread out away from the egg mass from which they hatched.

Some spiders protect their eggs with a third type of silk. After laying her eggs in a large mass, the spider builds a protective sac around them. Some species have a very fluffy, cotton candy appearing covering. Others make a cocoon-looking, tough outer shell. Still others produce a blanket-like covering over the ova. One unique way of assuring a successful hatch is to hold the silk covered eggs in the females jaws until they hatch. The frail looking, long legged cellar spider uses this method. You may have seen these spiders in a dark corner of the basement or tool shed.

The most obvious use of webs, however, is the capture of prey by the web spinning spiders. The big round orbital webs of the garden spiders are truly an engineering feat. The anchor lines across the radius of the web are not sticky, but the cross-webbing is, and that allows the unfortunate prey to be caught. The spider itself uses the framework of the web to maneuver about so that it will not get itself stuck.

Spiders that form a shield-like web (like grass spiders) do not have a sticky surface, but rely on vibrations on the web to run out and capture the prey. There are many variations in various species for capture webs, one of the most bizarre being a spider that actually forms a lariat type of web that it throws over the prey.

Spiders are fascinating creatures that deserve our attention and close observation. Watch them in your garden this growing season!

