Nature Week at Heritage Village - August 30th

Spiders

Spiders are arachnids like ticks, mites, and scorpions with eight legs. They also have eight eyes and lots of hairs. The eyes and hairs, combined with a primitive brain, collect life-sustaining information. Some spiders have great eyesight, some have poor. All have sensitive hairs that can determine wind speed and direction, humidity, tastes and smells, and a wide range of chemicals. For most species, their hairs are more important than their eyes.

Their digestive system is a set of narrow tubes only wide enough to pass liquids. They have no stomach to hold a lump of food. So they digest their prey outside of their bodies by injecting stomach enzymes into the victim, dissolving the prey and then sucking in the liquid nutrition.

In our climate, adult spiders die during the winter, leaving behind web-wrapped and insulated egg sacks to hatch in the spring. The baby spiders disperse by dropping a silk line and ballooning away on the wind.

Spiders move their legs with a hydraulic system rather than with muscles. Scientists are researching spider venom as a potential pesticide.

Spiders use a wide range of techniques to catch their prey. They can spin a web as a trap and then sit and wait for prey to arrive or they can actively hunt - walking, stalking, and jumping about.

The garden orb-weaver (top) creates the round web that so beautifully adorns the fall field at Heritage Village. These spiders produce two types of silk - sticky and non-sticky. They build the scaffolding for the web by starting with a non-sticky base line between two twigs. From this they drop a line to form a Y-shape. From the center of the Y they run non-sticky radii to define the dimensions of the web. Then they start at the center and circle around laying a spiral of sticky silk. When finished they retreat to the center by deftly walking on only the non-sticky strands. When an insect blunders into the net, the spider darts out, wraps the victim in silk, and then leisurely digests and sucks up its dinner. About 1/2 of the prey that hit the web get away. Every morning the spider eats its old web to retrieve the nutrients and then builds a fresh one.

Stalking spiders, like the crab spider (right), sit in wait for the prey to land within reach of their crab-like, long front legs. They use the flower as a lure. An individual crab spider can turn white or yellow, generally sitting on flowers of the same color. This appears to be a camouflage technique but new results indicate that it is not. No one seems to know why they change color. Quick reflexes are needed to nab a bee or butterfly pollinator. Unfortunately the spiders are not very effective, catching only 3.5% of flower visitors despite having good eyesight that gives a clear image up to 8 inches away.

Crab spider

Arachnophobia, an abnormal level of fear of spiders, occurs in 50% of women and 10% of men and is more common in European derived societies. There were only 100 deaths from spider bites in the entire 20th century. Compare that with the over 100 deaths per day in the United States from car accidents. People mistakenly attribute many of their bites to spiders when the culprit is actually something else. Take the time to watch a spider build a nest and you will hold it in much higher esteem.

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