Consuming Love

Jeff Mitton


My breakfast was interrupted by a subtle movement of a distinctive shape. The first chilly days of fall had driven a black widow indoors to seek warmth, and she was weaving a web in a corner of my dining room.

An adult black widow is shiny black, with a brilliant red hourglass on the underside of her abdomen. Her body is about one half inches long, and she has long, slender legs. The adult male is less than half as large, with longer legs, and several red or yellow bands on the sides and top of his abdomen.

Black widows are the most poisonous spiders in North America. They are not aggressive; most bites are delivered when a person unwittingly disturbs the web. Virtually all bites are delivered by adult females. Adult males are capable of biting, but their small, weak fangs cannot penetrate human skin.

Adult females rarely wander from their webs, which they place in rock crevices, woodpiles, outhouses, garages, attics, and crawl spaces. The web is a haphazard tangle of threads, up to three feet in diameter.

Black widows do not hunt, but wait for flies, moths, grasshoppers and pill bugs to entangle themselves in the web. The larger insects are killed by a poisonous bite, but the docile pill bugs are simply wrapped in silk, and either consumed immediately or stored in the web. After the spider sucks all of the fluids from its prey, it discards the dry corpse to the mummy pile beneath the web.

A female deposits twenty-five to one thousand eggs in a silk capsule, which the female defends in the web. Tiny spiders hatch out in twenty days. They are too small to capture their own prey, so they eat one another until they are large enough to subdue insects.

Natural selection shapes many adaptations, including behavioral traits, to maximize the number of offspring that survive to breed the following generation. As a consequence, mating of black widows is not a romantic escapade, but a struggle of conflicting goals.

The diminutive male comes seeking a mate, and timorously vibrates the female’s web. If she is hungry and not inclined to mate, she captures and eats him.

If a courting male encounters a receptive female, he binds her with silk to her own web, and transfers his sperm to her genital pore. Pedipalps, leg-like structures beside the
mouth, are used to collect and transfer his sperm. Females store sperm, so she will not need to mate again.

After mating, the female frees herself, and then makes a decision. If she is not hungry, the male is allowed to beat a hasty retreat. But if she is hungry, she eats him.

The black widow does not mourn the death of her mate, but relishes his passing. He is recycled, so she can lay more eggs.

The black widow, *Latrodectus mactans*, is the most poisonous spider in North America. Virtually all of the bites are delivered by adult females, which have are shiny black, with a brilliant red hourglass on the underside of the abdomen. The adult female mates just once, and if she is hungry, she eats her mate; hence the name black widow. This spider was spinning a web in my dining room.

Photo by Jeff Mitton