

Dragonflies and Damselflies

By Bob Garrison

Dragons and damsels call to mind images of Camelot and King Arthur. The modern namesakes of these mystical times, dragonflies and damselflies, in fact predate King Arthur by over 300 million years, arising long before dinosaurs roamed the earth. These living legacies of early earth history have changed little from their ancient beginnings. They offer a link, both mystical and biological, to our past and our future.

The Dragonflies are still one of the most prominent groups of aquatic insects and definitely the most recognizable and interesting to watch. They belong to the insect order Odonata which is divided into two groups, the true dragonflies and the damselflies. Both have a life cycle that requires the nymph, or immature insect, to live underwater before emerging as an adult. The nymphs are sensitive to water pollution and their presence or absence from a wetland often reflects local water quality. While a few of the damselfly nymphs eat only algae, the remainder are voracious predators, feeding on other aquatic insects, worms, snails, small fish and tadpoles. As the nymphs grow, they continue to molt their outer skin or exoskeleton until they reach their pre-adult size. At this stage, they climb from the water in the early morning or late afternoon and shed their last exoskeleton. The newly formed adult rests on the abandoned husk for a few hours, pumping blood into the soft wings and abdomen until they reach their final size and hardness. Adults generally live only a few months, but some nymphs require up to three years to mature.

Adult damselflies and dragonflies are easy to tell apart. Both have the typical body form of a large head and long, skinny body. The damselflies fold their wings over their abdomen when at rest. They are generally much smaller and delicate than dragonflies. Damselflies are weak fliers and remain near the ponds and streams where they lay their eggs. The dragonflies cannot fold their wings when at rest and are strong fliers. Dragonflies travel great distances to search for prey and can be found hundreds of miles from any water source.

Common names abound for this group of insects. The most common and descriptive of the names is the mosquito hawk. Both the damselflies and dragonflies capture their prey on the fly. They form a basket with their legs and snare other flying insects which are eaten in the air. Their remarkable eyesight and darting flight make them efficient predators.

Dragonflies and damselflies have a unique breeding behavior that is often seen and questioned. While most insects mate abdomen to abdomen, the males of this group transfer sperm to a holding area just behind their legs. The males also have special claspers at the end of their abdomen which are used to hold the female behind the head during copulation. It is very common to see damselflies in this front to back configuration. When the female is ready to accept the sperm, she extends her abdomen up under the male and collects the sperm from the holding area.

Where and How to Watch Dragonflies and Damselflies

About 100 species of damselflies and dragonflies live in California. Each species requires a specific type of aquatic habitat to breed. Start your search by visiting a variety of habitats, from urban ponds to cascading mountain streams in the spring and summer when the adults are present. Watch for their characteristic darting flight over or near the water and follow their flight until they land. They often use a favorite twig to rest and watch for prey. Once you find a dragonfly at rest, use your binoculars to get a close look at the wonderful colors and characteristics of these amazing animals. Also search the edges of the water, especially along emerging vegetation, for the dried exoskeletons of the nymphs. They provide an exact copy of the nymph that changed from its squat, grotesque form to the bright, colorful insect which flies before you.

Interest in dragonflies and damselflies is growing throughout the world. A number of associations have formed in Europe and in the eastern United States to share information and study this group of insects. While no comprehensive field guides currently exist for California species, a new North American field guide to the dragonflies and damselflies will soon be published. Watch your favorite natural history store bookshelves for its arrival later this year.

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