

Notes from a Rogue entomologist

Dragonflies: Lords of the air

BY RICHARD J. HILTON

A common tactic in nature conservation is to focus on the “charismatic megafauna” such as lions and tigers and bears (polar, panda, etc.) since those truly magnificent animals make such a striking impression on us. Similarly with insects, we frequently focus on the spectacular species: colorful and showy butterflies; big beetles, the more bizarre the better; and the dragonflies. Instantly recognizable, the dragonflies and their daintier cousins, the damselflies, are beautiful to watch. They are large, brightly colored and exceptional fliers. They can hover, dart off in a flash, and fly backwards; one report stated that they can fly upside down, which I have never seen, but it doesn't surprise me. With their huge holoptic eyes, these insects are deadly predators, able to catch other flying insects and feed on the wing.

The larvae of the dragonflies and damselflies are aquatic and often referred to as naiads. Like the adults, the larvae are predacious, armed with a hinged jaw that shoots forward faster than the eye can see to grab their prey. The larvae will molt many times, and the full cycle can take multiple years depending on the species.

When the larvae are fully grown they crawl out of the water to make a final molt to the adult stage. It takes time for the wings to expand and harden, and these teneral adults are often caught as they are not yet ready to fly. However, these specimens are poor as the colors are not fully developed. Due to their aquatic roots, they are most often found around bodies of water. Of course, once they can fly, catching them can be a difficult task, requiring experience along with a healthy dose of patience (and I admittedly lack both).

Of course, collecting can be done with a camera, but that still requires a good deal of stealth and skill.

Dragonflies and damselflies are in the group known as the Paleoptera, meaning “ancient wing.” Dragonflies cannot fold their wings, so even at rest the wings are always sticking out to the side. Damselflies, whose bodies are more delicate than dragonflies, do have the ability to fold their wings together over their body, and when at rest they are easily identified by that trait. Dragonflies are descended from similar-looking species dating back 300 million years. I can recall as a child looking through my “Golden Book of Dinosaurs”

at the image of dragonflies with a three-foot wingspan. While that claim can still be found on the Internet, the largest fossil wingspan actually measures less than two and a half feet. (I guess after 300 million years some exaggeration is to be expected.)

One trait that dragonflies and damselflies share is an interesting sex life. Even for an insect, the mating behavior of dragonflies is a tad unusual. Before copulating, the male grabs the female behind her head with the tail end of his body. You will often see pairs of dragonflies flying in tandem this way. However, since the tail end is where the insect genitalia are located, this approach by the male would seemingly make mating rather difficult if not altogether impossible. To get around this difficulty, prior to grabbing a female, the male puts his sperm packet in a secondary set of genitalia underneath his body towards his legs. The female, after being clasped by the male, can now bend her abdomen forward to obtain the sperm packet, forming what is known as the wheel position, which can sometimes be observed. The male's secondary genitalia are not only designed to deliver the sperm packet, but can also remove a sperm packet from a previous mating. If there is one rule that insects live by, it is that all's fair in love and war. After dragonflies mate you may see the female of some species dipping her abdomen in the water as she lays her eggs.

There are some 5,700 species of dragonflies and damselflies worldwide. While that sounds like a lot, it is a fairly moderate number by insect standards. As with many insect groups the vast majority of species are tropical; less than 10 percent of all species are found in North America. Luckily, for those interested in our local dragonflies, a field guide was published in 2011 (*Dragonflies and Damselflies of Oregon* by Kerst and Gordon) that describes in detail the 91 species present in Oregon, including when and where they can be found. A species checklist is even provided.

Photo, top right: Common green darners in the wheel position during mating. Photo: Mark Chappell.

Photo, bottom right: Widow skimmer. Photo: www.giffbeaton/Dragonflies/Widow.

Southwestern Oregon is ideal for dragonfly watching as we sit at the confluence of three ecoregions: Klamath Mountains (includes Applegate, Rogue and Illinois Valleys), Cascades and Coast Range. The summer months of June, July and August have the greatest diversity of species so prepare for a myriad of colors—greens, reds, and blues. If so inclined, learn the common names that conjure up poetic images: darners (think flying knitting needle), skimmers, and meadowhawks; and for the damselflies, there are bluets and dancers. But no matter how deep into the subject you want to go, just get out into nature and enjoy the show.

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Even for an insect, the mating behavior of dragonflies is a tad unusual.

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