

Only the Tasty Bits



When my girls were quite young, we used to spend a lot of time in a sandbox. It was one of our favorite ways to spend what was left of an afternoon, after I got off from working all day.

The sandbox was located not far from the shores of a lake, and so it was a terrific place to play while listening to the calls of the loons. It was a peaceful time together, except that around the time of the birth of my youngest child, my oldest daughter somehow developed a fear of the dragonflies we would invariably encounter.

I noticed that one dragonfly, in particular, seemed to set off Maggie's apprehension. This was the one that flew closest to the corner of the box. You could watch it, as it made its patrolling flights in the same, small area, despite what would appear to be endless opportunities in the sky. When it dawned upon me to name the insect, Maggie came to know him as Sam, and she lost her concern.

That Sam seemed to stick to a particular area turns out to be a part of the biology of dragonflies. It came as something of a surprise to me that dragonflies exhibit territoriality. Somehow I expect that kind of behavior out of birds, mammals, and even turtles. I guess I just don't give insects enough credit. As it turns out, the males of some species of dragonflies are very competitive over breeding and mating sites. Only the dominant males mate; the others are driven away.

I don't know to what species Sam belonged, but there are about 140 species of dragonflies and their close relatives, damselflies, in Minnesota. There are perhaps 6500 species in the world. Dragon- and damselflies are the most ancient of insect species, having a history that dates back about 300 million years.

Dragonflies have no sense of hearing or smell, but they do have very large compound eyes, with nearly 30,000 lenses. Their hunting is sight-based. With a quick turn of its head, a dragonfly can see not only above and below it, but can scan 360 degrees around it.

Often locally known as "Mosquito Hawks", dragonflies are voracious predators. This is true whether in the adult, flying form, or in the aquatic larval form. Adult dragonflies capture only live prey; flying insects are generally caught while the dragonflies are on the wing. Smaller prey items are caught by mouth; larger insects are snared in a basket they form with their legs. Highly maneuverable, dragonflies can hover, glide, and pursue prey at speeds up to perhaps 38 mph, depending on the species.

The aquatic larvae, known as naiads, are also very efficient predators. Besides other dragonfly larvae, they eat waterfleas, mosquito larvae, tadpoles, and even small fish. An integral part of the food web, both the larval and adult dragonfly is consumed by many other creatures.

Dragonflies spend the majority of their lives in the aquatic form. Most species mature to adulthood in 1 to 3 years; some may take 5 years. Water temperature and growing season length contribute to how long it takes larvae to mature.

Eventually the naiads emerge from water. Clinging to a vertical surface, like a plant stem, the larvae hooks its claws into its perch. The shell cracks, and a dragonfly emerges. As much as 90% of the population experiences mortality during such transformation, due to bird predation. Perhaps as an adaptation to avoiding some of this predation, dragonflies generally emerge in the very early morning.

In the North woods, no dragonflies overwinter as adults. Most winter beneath the ice in the larval form, in a state of suspended animation. Some species of dragonflies migrate. The Common Green Darner makes a one-way trip from the Northern U.S. south to Texas and Mexico in the fall. Its offspring make a one-way trip north in the spring. At Hawk Ridge in Duluth, the migration of the tiny hawk known as the American Kestrel (“sparrow hawk”) coincides with that of the green darner. These hawks are believed to be using the dragonflies as a food source.

Dragonflies depend on abundant and diverse types of wetlands, rivers, and lakes. An extremely wet forest, the Chippewa National Forest provides over 400,000 acres of lakes and wetlands. Wetland loss through drainage and land use development is a conservation issue in Minnesota and much of the U.S., but within the Chippewa, abundant healthy wet habitats remain for dragonflies and a host of interconnected other species for all to enjoy.

My husband noticed something interesting this past weekend, while we were relaxing along the lakeshore. There is a thriving colony of purple martins at this particular location, and the adult birds are really hustling to feed their young. Quite a few dragonflies are being fed to these baby birds, as can be observed by the large wings protruding from the adult birds’ beaks as they enter the nesting box. That’s no surprise, as dragonflies are large insects, and as a food item must be rather a good catch. The curious thing, to me, is that the adults also leave with dragonfly wings when they exit the box. It must be that their babies only consume the tasty bits.

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Original watercolor by Marilyn Edmonds
Battle Lake, Minnesota