

Where Dragons Fly
Part Two

By Kim Smith

Early last September, on one of those rare, rare Sundays when my husband and teenage son were free, I asked them to accompany me on a walk through the magnificent Coolidge Reservation. Our daughter had recently departed for college; there was something so reassuring about this simple act of walking through the woods with them both.

Parents of a teenage boy understand that it is easier to fly across the country than to get them to take a woods walk, particularly in their territory. Coolidge Reservation is just far enough away that we would not run the risk of meeting any of his friends. Early morning was glorious, warm and balmy, and later that morning, ocean breezes brought billowing white clouds and cerulean skies. The woods walk was sweetly beautiful and we enjoyed every moment. The forested woodlands are maintained to perfection. Walking through the dappled sunlight of the sheltering oak and pine forest makes arriving at the ocean vista of the wind swept lawn all the more dramatic. The view was spectacular, and of equal interest was the flora and fauna at the edge of the expanse of lawn surrounding the headlands. Seaside goldenrod and New England asters were in full bloom and the adjacent meadow and embankment were abuzz with pollinators.

We must have encountered at least a dozen migrating green darners (*Anax junius*), surely attracted to the insects nectaring at the wildflowers, as well as the mosquitoes and midges. I was able to take photos of Monarchs, co-operative Clouded Sulphur, and all manner of bees, but try as I might, not a single photo of the green darner. I stopped after a few minutes, as I did not want to jeopardize this time with husband and son, obsessively chasing butterflies and dragonflies. Green darners are one of the most widely distributed dragonflies, so I knew there would be time enough to get that photo.

Anax junius is amongst the largest and fastest of dragonflies in North America and like all Odonata, they are excellent hunters. Each of their two huge eyes is comprised of thousands of six-sided light sensing units, called ommatidium. These compound eyes are arranged to give dragonflies nearly a 360 degree field of vision, not only providing them an advantage in hunting, but making them difficult to be hunted. A true ally for human kind, the common name "Mosquito Hawk" stems from their endless appetite for mosquitoes.

Odonata are an ancient order of insects. A fossilized impression from a coalmine in England dates to 300 million years ago. The largest known fossil, the species *Meganeura monyi*, had a wingspan of two feet. The largest Odonata in the world today is a damselfly from Costa Rica with a wingspan of 7.5 inches. Colorful, and large by comparison to other New England dragonflies, green darners are one of the easiest dragonflies to recognize. Their wing spans 4.5 inches, with a body length of 3 inches.

A. junius are on the wing all year round in their southern range. In the northeast they are typically seen from April through September. In late summer they begin to aggregate in

open fields and meadows feasting on small insects before departing south for the winter. The migration of *A. junius* is poorly understood. Dragonflies' migration patterns are similar to those of songbirds, suggesting a strong symbiotic evolutionary link to the behavior of both. There are many more questions than answers. One interesting theory is that, as hawks also migrate at the same time and the green darners are an important food source for hawks, the migration of *A. junius* evolved preceding that of hawks.

Green darners are dimorphic insects, which means the male and females look different. Both have a green thorax (mid-section), the male's abdomen is brilliant blue and can change hue depending on available sunlight. The female's abdomen is a muddy purplish, brown-gray. The overall green color provides camouflage amongst the vegetation of the marshes, ponds, lakes, and slow moving streams in which they are found. Mating in July and August, the male chases the female, grabbing her with his claspers at the tip of his abdomen, and attaches himself to her by the neck. She aligns her genitalia to his and the darners form a circular shape, what is often referred to as a wheel, and from the side view, looks like a heart. They may stay coupled together for hours, he often guiding her to the best spots, to oviposit her eggs. Usually, she goes where plants grow from water, and clinging to the plant's stem, backs into the water, making a slit in the vegetation with her sharp ovipositor, laying her eggs inside the slit. The female lays copious amounts of eggs to ensure that at least a few will mature to adulthood.

Dragonfly larvae are called naiads. Green darner naiads are dark, greenish brown and will molt several times, shedding their outer skin, eventually growing to two inches. They are ferocious predators and attack just about anything smaller, and sometimes even larger, than themselves. They eat tadpoles, small fish, aquatic insects, and aquatic worms. When ready for their final molt, the naiads crawl out of water onto a plant stem and emerge as an adult. When the cold weather arrives immatures stay in the water to winter over.

A healthy green darner population indicates a balanced ecosystem as it is a species that lives in freshwater with terrestrial habitats.

Several days after our woods walk I was in the garden photographing Monarchs nectaring at the lantana florets. Into my camera's eye flew a female green darner, alighting less than a half a foot away. Holding very still, I was able to photograph and observe her for several minutes. Although green darners eat butterflies, she had no interest in the Monarchs. A crimson morning glory had wended its way through the lantana and growing nearby was *Verbena bonariensis*, sweet alyssum and a host of nectar plants provided for pollinators. Perhaps she would have stayed longer and hunted if I had not been present. Her beauty was magnificent and I was grateful to have even this very brief moment.

Female Green Darner ~ Anax junius

