

The Dragonfly: Friend or Foe?

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“Mosquito hawk,” “snake doctor,” and “Devil’s darning needle” are some of the more colorful local names that refer to these large spectacular insects. Despite a widespread belief that dragonflies sting, they do not. They have no means of stinging and are completely harmless to man. In fact, life history studies indicate they are one of our most beneficial insects.

Description

Dragonflies and damselflies, a closely related group, belong to the order Odonata. They have large compound eyes, short, bristle-like antennae, and four elongate membranous wings. Some species have transparent, colorless or somber-hued wings; others have brilliantly colored ones — blue, green, purple, white, or bronze. Still others may have conspicuous mottling or spotting on the wings. Not only the dragonflies’ wings, but their bodies, too, may be brightly colored.



Damselflies are easily distinguished in the field by their more delicate features and the vertical position of the wings over the abdomen when at rest. Dragonflies are more robust in structure, strong fliers, and hold their wings in a horizontal position when resting. They are master aerialists, capable of swift flight, of a backward as well as a forward darting movement, and of hovering.

American Rubyspot Damselfly (Hetaerina Americana)
Photograph and copyright by Clark Schiffer

Of approximately 5,000 species of Odonata in the world, over 360 species of dragonflies occur in the United States. There are 147 species of dragonflies that have been reported or are suspected to be present in Illinois. Present day dragonflies in the United States range in wingspread from 1 ¼” (32mm) to almost 5” (127mm). An extinct dragonfly, *Meganeura monyi*, known only from 250 million-year-old fossil beds, had a wingspread of about 2 ½ feet (762mm).



Green Darner Dragonfly (Anax junius)
Photograph by Everett Cashatt

The Green Darner

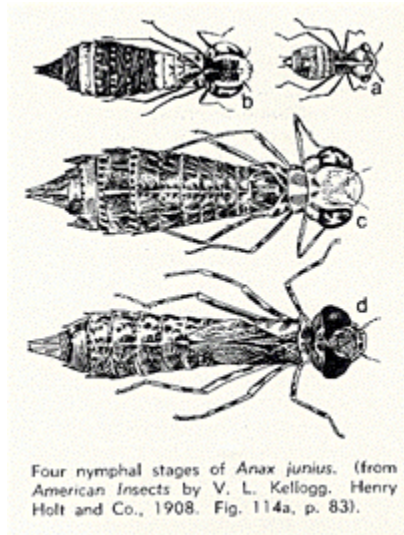
The green darner (*Anax junius*) is a striking insect and one of the most common and widespread dragonflies in North America. The transparent, yellow-tinged wings have a

wingspread of about 4 inches (102 mm). The head and thorax are green, contrasting with the bright blue abdomen.

The life span of this species, including egg, nymph, and the adult stages may extend for more than a year.

Life Cycle

In early spring the eggs may be deposited in floating masses of plant debris. The female green darner, unlike many other species, has an ovipositor that it uses to insert eggs into the stems of aquatic plants. During the growing season it deposits yellowish, 1mm-long eggs into a double row of slits along a plant stem beneath the surface of the water. After about three weeks the young emerge and live underwater, voraciously feeding on small aquatic animals. Many successive molts take place over a period of eleven months before the final nymphal stage is reached.



Four nymphal stages of *Anax junius*. (from *American Insects* by V. L. Kellogg. Henry Holt and Co., 1908. Fig. 114a, p. 83).

The “mature” nymph crawls out of the water onto a rock or plant stem during the night or early morning hours. The nymphal skin splits dorsally and the winged adult pulls itself out to become fully expanded in about half an hour. However, it is several days before it reaches its peak flight capacity.

Predator and Prey

The large, hemispherical compound eyes are used in searching for small air-borne insects. Each eye is composed of nearly 30,000 distinct sight elements called ommatidia. The dragonfly positions its six legs in a basket-like manner literally to scoop its prey out of the air. The two front legs hold the prey in position so that it may be eaten while in flight.

Dragonflies, in turn, may be food for swifts, swallows, purple martins, kingbirds, and frogs. It is usually attacked when it is basically immobile, during and shortly after transformation from the nymphal stage to the adult.

Although dragonflies tend to feed indiscriminately, as a group they serve an important ecological function in aquatic and aerial habitats. The nymphs are an important part of the food chain from many species of fish and, eventually, for other top predators, including man.

Benefits to Man

Perhaps more important to man is the role of the adult dragonfly in helping to check population levels of those insects such as mosquitoes (which transmit diseases such as encephalitis, malaria, yellow fever, dengue, and dog heartworm), and horseflies and deerflies, which transmit anthrax and tularemia.

Dragonflies also help to control other biting flies such as black flies, sand flies, punkies (“no-see-ums”), midges, eye gnats, and stable flies. Only one species of dragonfly, the bee butcher (*Coryphaeschna ingens*), is known to be an economic pest. In the southeastern United States it feeds on honeybees as they fly to and from their hives.

Predator animals were once poorly understood and considered to be man’s enemies because of their habit of preying. Ecologists have shown they are necessary for a biological equilibrium. Dragonflies are not the complete answer to controlling certain kinds of insect pests, but they do help reduce the population levels.

Friend or foe? The choice is clear.