

Dragonflies, nature's flying wonders

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For centuries mankind has been looking to the natural world to understand how things work. Scientists have studied nature to better comprehend many concepts. For example, researchers are currently using chemicals found in plants to replicate a key process in photosynthesis that utilizes the sun's light to split water into hydrogen and oxygen. Mimicking nature allows humans to ensure the greatest productivity for the least amount of materials and energy. One of the most intriguing skills found in nature is the ability to fly. Humans have been fascinated with flying since the early days of man, which has spurred man's desire to soar in the skies. One creature that scientists have studied and admired for its fascinating abilities is the dragonfly.

The flying ability of dragonflies has been researched and envied by engineers who design aircraft for years. A dragonfly can hover in the air like a helicopter. It is one of the fastest creatures on the face of the earth and it can dart to the side, fly backwards and turn a summersault in mid air. Dragonflies have been clocked traveling up to 22 – 34 miles per hour in flight. They can fly forward at about 100 body lengths per second, and backwards at about three body lengths per second.

In addition to their amazing flying abilities, dragonflies serve an important role in wetland wildlife. They are surely among the most beautiful and interesting insects and they are also among the most ancient of living creatures. Dragonflies are very important predators. They munch on mosquitoes and other small insects such as bees, flies and ants.

They are characterized by their huge, multifaceted eyes, which take up most of their head. They have two pairs of transparent wings and a very long body. They are insects so they have six legs. However, all these legs are not for walking. The dragonfly uses them to perch or hold onto prey. They breathe through spiracles, which are tiny holes located on their abdomen. Dragonflies do not sting, as many people believe. They do not harm humans in any way.

But most of the dragonfly's life is spent in the water. Female dragonflies lay eggs in or near lakes, streams, ponds or other wetlands. The nymphs that hatch from the eggs feed and grow underwater. These nymphs are predators and eat tadpoles, snails and insects while in this stage. The gills of the nymphs are located inside the abdomen. The tiny creature will expand and contract its abdomen to move water over its gills and squeeze the water out rapidly for movement.

Most of the dragonfly's life is spent in the larval stage. It will molt many times during this time and development varies depending on altitude and latitude. This stage can be from one to six years. Once the larva has completed its growth and development stage, it will leave its aquatic environment and start a brand new life as a dragonfly. In an effort to get its new life started, the nymph will climb up a plant stem or other object until it is completely out of the water. Using its claws, it will attach itself to the object. The larval case will break at the back of the head and ever so slowly, the adult will emerge. Blood is then pumped around the body, which makes it expand. Once these things take place the dragonfly is ready to take flight.

Oddly, once the adults emerge, they head away from their watery home. This is called the dispersal period. It usually lasts from three days to three weeks. At this time of their lives, dragonflies will obtain their full, spectacular coloration and they will also reach sexual maturity. Once they are ready to mate, they head back to the water. After mating, the female will lay her eggs and then fly away from the water until she has another batch of eggs ready for fertilization. The adult dragonfly lives only for about one or two months.

Dragonflies are excellent hunters. As far as prey is concerned, the dragonfly's mouth is made for biting. They have a lip-like feature, which can be extended forward from underneath the head that allows them to grasp onto prey faster than most prey can react. Their six legs are also helpful for holding onto and catching their prey. These creatures will eat whatever is available. Sometimes, they hunt in groups where large numbers of termites, ants, mayflies, caddisflies or gnats are swarming. However, their food of choice is flies. Dragonflies do not hunt in cold weather.

Birds, lizards, frogs, some spiders, fish and even larger dragonflies are among the creature's predators. They avoid being captured in many instances because of their excellent visual responses and speed. It is said that dragonflies have the sharpest vision of all insects and are especially adept at spotting other insects on the move.

The dragonfly is a member of the order Odonata, which means toothed ones. They have been around for thousands of years in some form or other. They are fascinating creatures who live their lives in two completely different stages. They are helpful to humans because of their voracious diet of flies and mosquitoes. Watching these magnificent creatures in their own environment may give the viewer a wonderful natural experience.

Some interesting facts about dragonflies:

- A bee flaps its wings about 300 times per second, but a dragonfly flaps its wings at only 30 beats per second. (they have 2 sets of wings)
- The largest dragonfly fossil found had a 2 ½ foot wingspan and currently there are dragonflies in Costa Rica that measure 7 ½ inches across the wings.
- A dragonfly's eyes have about 30,000 lenses and a dragonfly can see all the way around it.
- Each one of a dragonfly's wings can move independently. This makes the dragonfly a very versatile flyer, able to hover, turn at 90 degree angles, dart backward and forward, and come to a sudden stop.
- A female dragonfly lays up to 100,000 eggs at a time.
- Dragonflies are named after their fierce jaws, which they use for catching prey.