



# SMART

## Angler's Notebook

by Carl Richardson

### Dragons & Damsels

We know dragonflies and damselflies by many names: Skimmers, darners, clubtails, flappers, bog dancers, and marsh spreadwings. Technically, they are two different kinds of insects that belong to the same order, Odonata. There are more than 450 species of Odonata worldwide. The Fish and Boat Commission estimates that some 173 of these species live in Pennsylvania. Odonata have incomplete metamorphosis. Most have a one-year life cycle. Some live as nymphs for as long as three years.

Dragonflies and damselflies are commonly associated with wetlands and warmwater habitats. Some species live in large streams, especially those with lots of aquatic vegetation. In fact, they are abundant in several of our world-class limestone streams.

#### Nymphs

Nymphs have large chewing mouth parts that extend as another set of hands. Most nymphs are predatory. They eat small fish and other insects. Neither dragons nor damsels have true tails. However, damsels have three paddle-like gills attached to the last body segment. Dragonflies take water into a chamber. They get their oxygen from this water. They also squirt this water out to propel themselves. Dragonfly larvae are also known as "mudbugs."

#### Emergence

The nymph crawls out of the water just before the adult emerges. The nymph climbs vegetation and the adult emerges. Most species emerge in spring and summer.

#### Adults

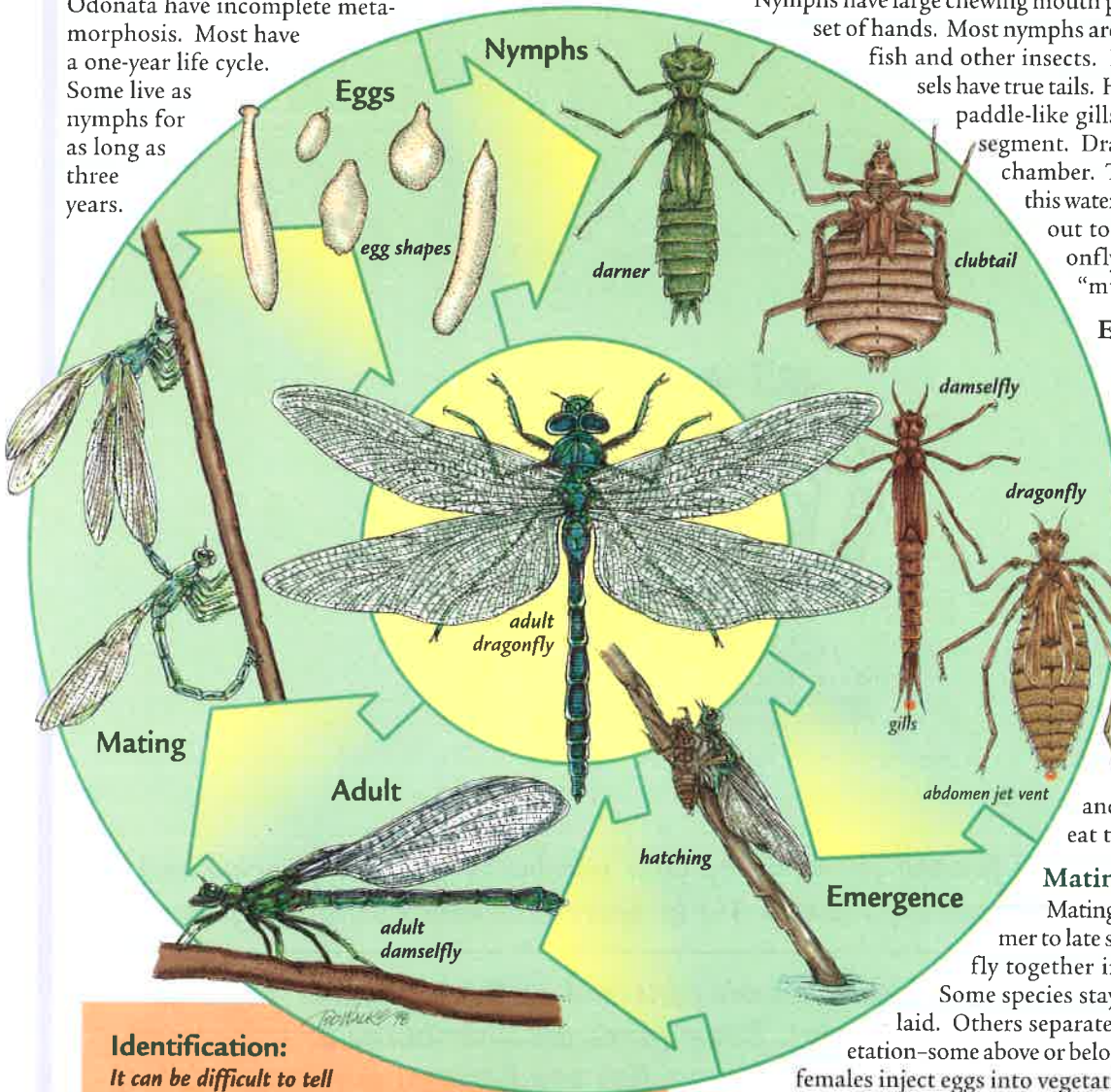
Dragon and damselfly adults actively feed. Many call them "mosquito hawks." They eat other aquatic insects. Dragon and damselfly adults are eaten by frogs and birds. Bass and pickerel eat them, too.

#### Mating

Mating usually occurs in mid-summer to late summer. Males and females fly together in tandem during mating. Some species stay in tandem while eggs are laid. Others separate. Females lay eggs on vegetation—some above or below the water's surface. Some females inject eggs into vegetation stems or leaves. Other females dapple the surface while dropping egg clusters.

#### Eggs

Eggs are laid in batches, or clusters. The number of eggs laid varies from several hundred to several thousand. Development varies by species. Some eggs hatch in as short as 10 days to as long as one to two months.



#### Identification:

It can be difficult to tell the difference between adult dragons and damsels. Adult dragons hold their wings flat out at the side when at rest (see center of illustration), like airplane wings. Damsels fold their wings together straight above the body (see illustration above).