7.ORDER Odonata: Dragonflies and Damselflies

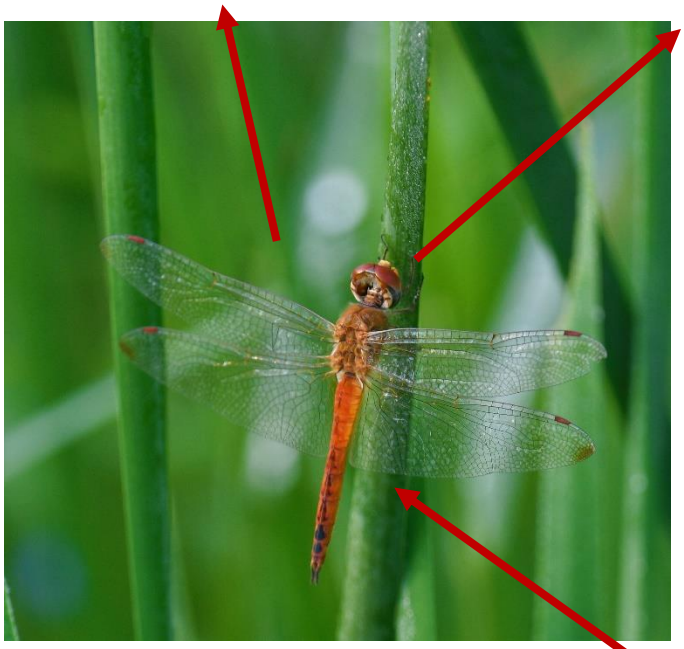
Etymology: Greek 'odonto', meaning tooth, refers to the strong teeth found on the mandibles of most adults.

Dragonflies are known by many interesting common names, including "snake doctors", "devil's darning needles", and "mosquito hawks".

Hemimetabola - incomplete metamorphosis

Key Characters:

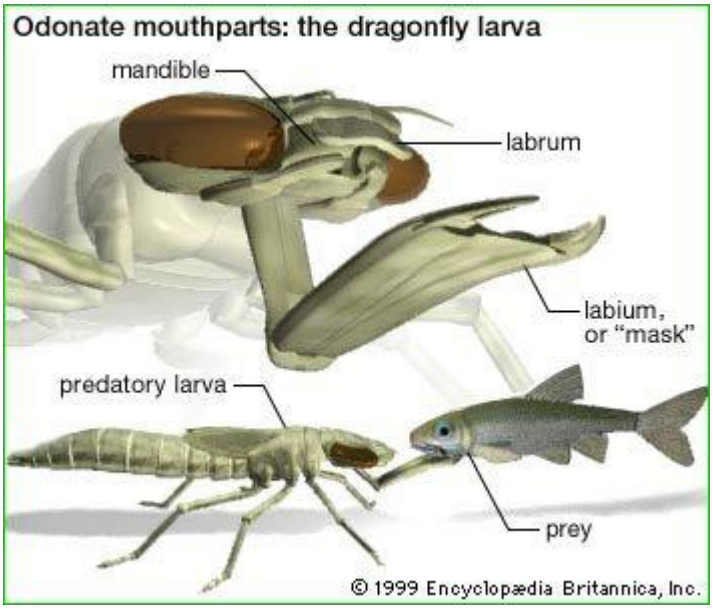
- Rectangular stigma (pigmented patch) near tip of each wing



- Large compound eyes
- Short, bristle-like antennae

- In DRAGONFLIES, hind wings have an enlarged anal region (broader toward the base than front wings), abdomen robust

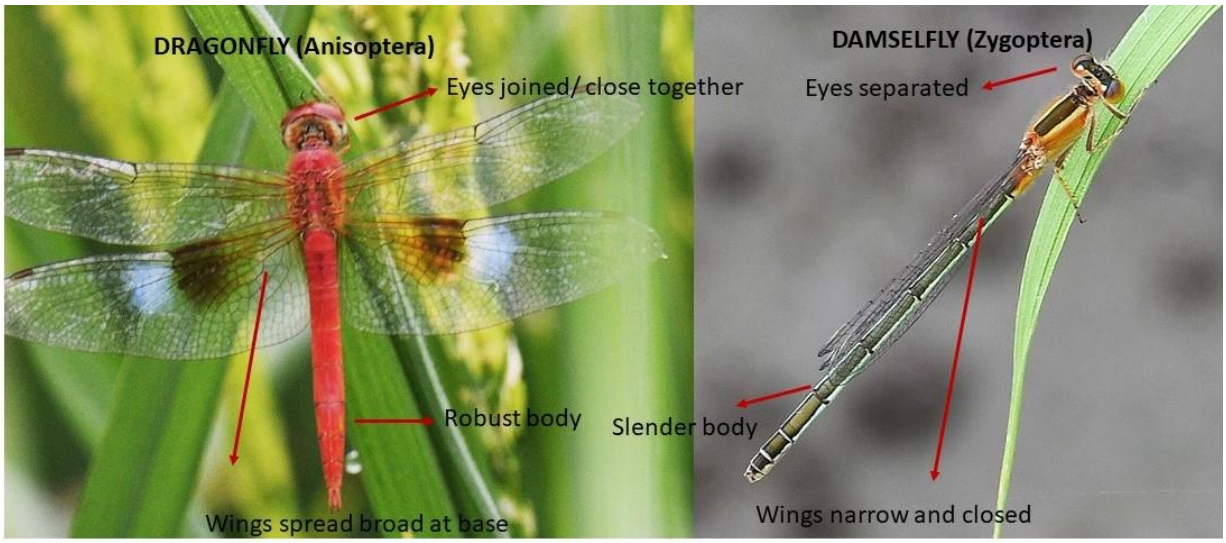
- In DAMSELFLIES, front and hind wings are stalked (narrow at the base) and similar in size and shape; abdomen slim.
- Legs are used as a basket for catching prey.



- Labial "mask" adapted for catching prey in nymphs called as Naiads

How to differentiate a dragonfly and a damselfly

Feature	Damselflies (Zygoptera)	Dragonflies (Anisoptera)
Body	Slender	Robust
Wings at Rest	Closed over body	Spread open
Eyes	Separated	Often touching or close together
Flight	Weak, fluttery	Strong, fast



Economic Importance:

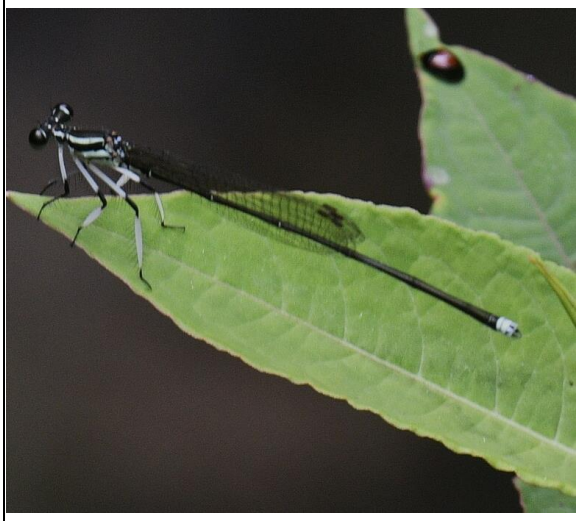
Most dragonflies and damselflies are regarded as beneficial insects because they feed on small flying insects such as mosquitoes.

They may also catch and eat honeybees and hence regarded as pests by the beekeepers.

In some parts of Europe, dragonflies are considered a threat to the poultry industry because they transmit *Prosthogonimus pellucidus*, a parasitic flatworm. The Dutch have a maxim: "Hide the hens, the dragonflies are coming."

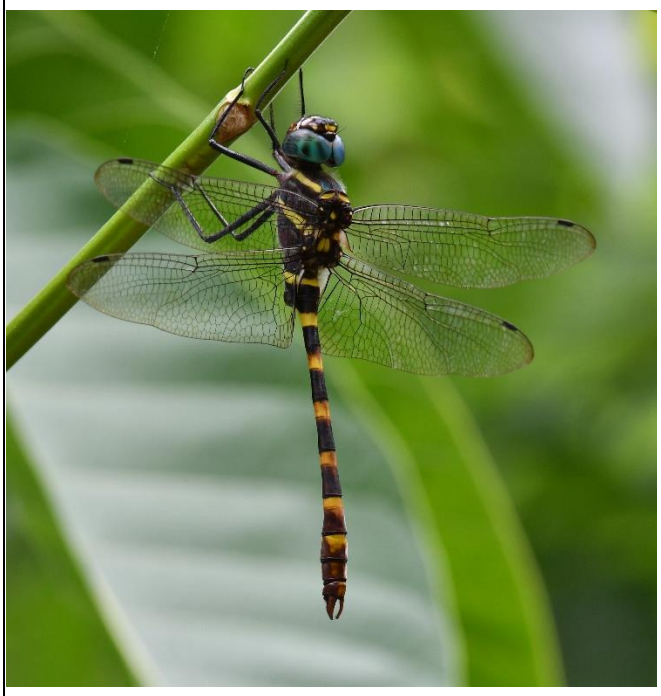
Suborder: Zygoptera – Damselflies: Slender bodies, wings held together above body at rest

Family	Common Name	Key Features
Coenagrionidae	Narrow-winged damselflies	Most common damselflies; brightly coloured; small and delicate 
Lestidae	Spread wings	Rest with wings partly open; slender abdomen; metallic or dull-coloured 

Family	Common Name	Key Features
Calopterygidae	Broad-winged damselflies	Large; often metallic; broad, colourful wings 
Platycnemididae	White-legged damselflies	Broad, flat legs often with white or pale markings; found near slow streams and rivers 

Suborder: Anisoptera – Dragonflies: Robust bodies, wings held open at rest, strong fliers

Family	Common Name	Key Features
Libellulidae	Skimmers	Most diverse; broad hindwings; colourful, perching species 
Aeshnidae	Darners	Large size; powerful fliers; eyes touch on top of head 
Gomphidae	Clubtails	Clubbed abdomen tips, eyes widely separated, live near streams 

Family	Common Name	Key Features
Corduliidae	Emerald dragonflies	Metallic green or bronze sheen; fast fliers; bright green eyes  https://www.inaturalist.org/observations/45452640
Macromiidae	Cruiser dragonflies	Long legs; fly continuously along water edges 
Petaluridae	Petaltails	One of the most primitive families; large, rare, found near clean streams  https://www.inaturalist.org/observations/297711173

Interesting trivia about Odonata

- Some naiads can shoot out their labium and catch prey in only 25 milliseconds.
- Scientists have documented large-scale migrations of dragonflies.
- **Wandering glider *Pantala flavescens* is the longest migrating insect in the world**.
- Odonata exhibit territoriality.
- Male Odonata have claspers at the end of their abdomen, but no external genitalia. Before finding a mate, a male attaches a spermatophore to his second abdominal segment. He then grabs a female around the neck with his claspers and she retrieves the spermatophore with the genital opening of her abdomen.
- Most dragonfly naiads can move forward by "jet propulsion". Rapid contraction of the rectal muscles, forces water out the rear end and shoots the insect forward.