

**ODONATA**  
**REQUIRED TAXA**

I. Suborder Anisoptera

A. Superfamily Aeshnoidea

1. Family Aeshnidae
2. Family Gomphidae

B. Superfamily Libelluloidea

1. Family Libellulidae
2. Family Corduliidae

II. Suborder Zygoptera

1. Family Calopterygidae
2. Family Lestidae
3. Family Coenagrionidae

# ODONATA

Common Name: Dragonflies, damselflies.

Etymology: From Greek, meaning toothed (probably referring to the prominently toothed mandibles).

Metamorphosis: Hemimetabolous; immatures called naiads.

## CHARACTERISTICS

Body: Medium to very large; elongate; well sclerotized.

Head: Very mobile; hypognathous.

Mouthparts: Ectognathous; chewing; naiad with prehensile labium.

Eyes: Large compound eyes; 3 dorsal ocelli.

Antennae: Short; setaceous, bristlelike.

Wings: 2 pairs; membranous; net venation; pigmented cell called stigma present; well-developed crossvein near middle of leading edge of each wing called nodus; wings held horizontal or sometimes vertical at rest.

Legs: Short and spiny with 2-segmented tarsi; 2 post-tarsal claws.

Abdomen: Elongate; adult male with gonopore on 9th segment and complex penis on venter of 2nd segment; 1-segmented cerci which in males serves as claspers during copulation.

Comments: Adults with open tracheal system. Most forms considered beneficial.

## SUBORDERS

Anisoptera (Dragonflies): Wings held horizontal at rest; hindwings broader at base than front wings; compound eyes close together; male with 3 terminal appendages.

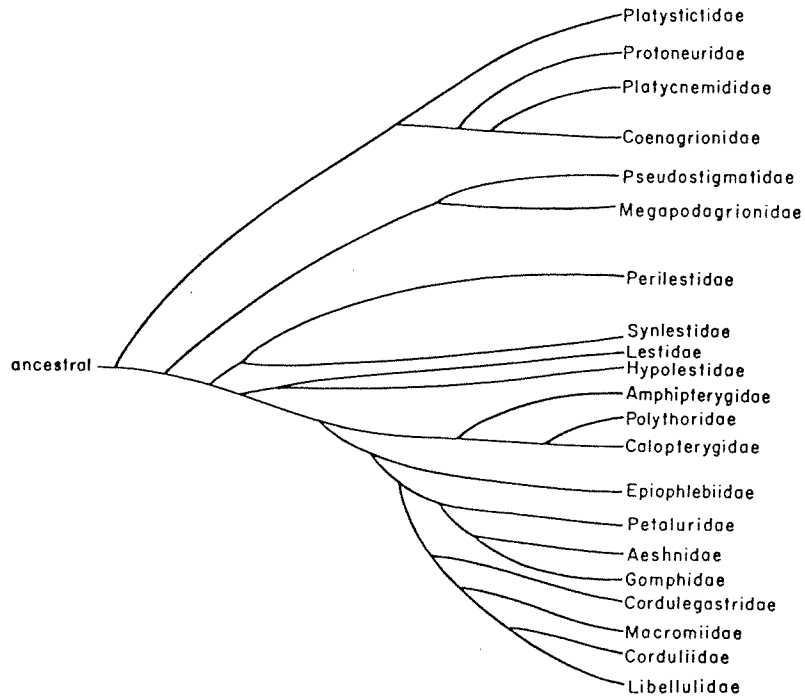
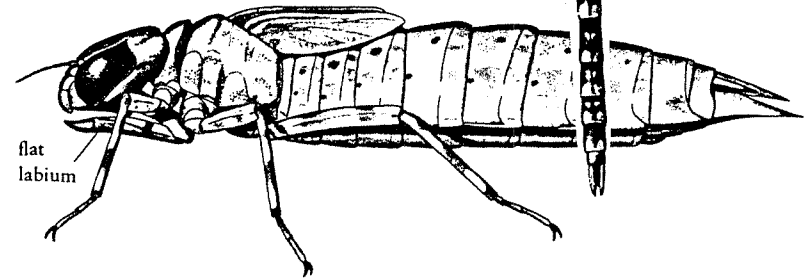
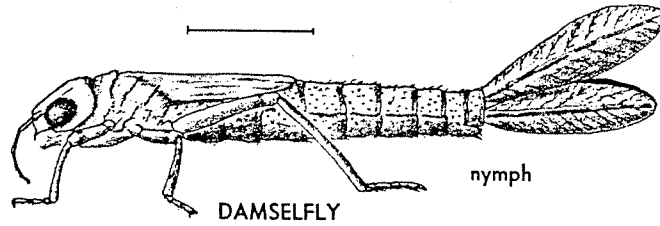
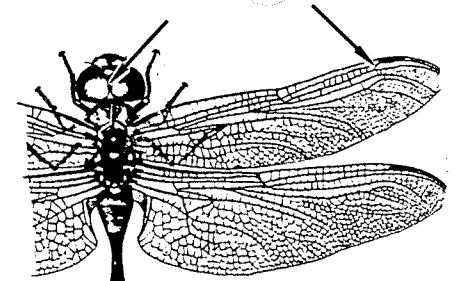
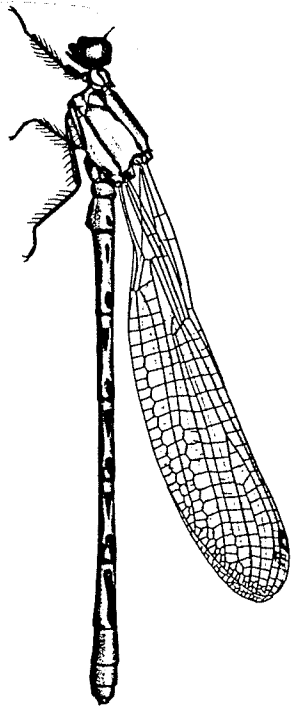
Zygoptera (Damselflies): Wings usually held vertical at rest; hindwings and fore wings similar in shape and size at bases; compound eyes well-separated; male with 4 terminal abdominal appendages.

## FAMILIES

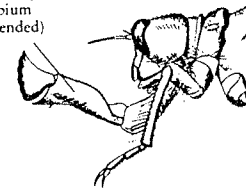
Aeshnidae: Triangles in front and hind wings similar in shape and orientation; compound eyes in contact for considerable distance on dorsal side of head.

**ORDER ODONATA**  
**SUBORDER ZYGOPTERA**  
**DAMSELFLIES**

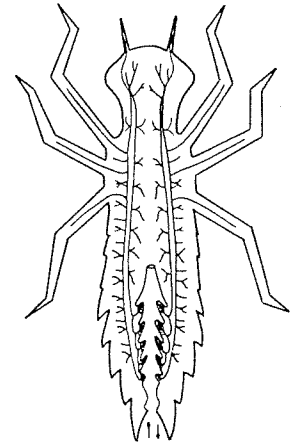
**SUBORDER ANISOPTERA**  
**DRAGONFLIES**



spoon-shaped labium (extended)



non-shaped labium

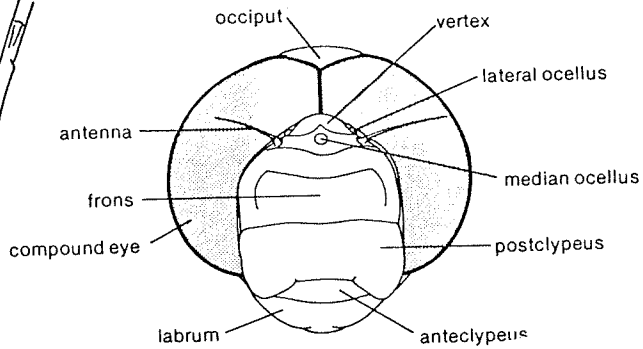
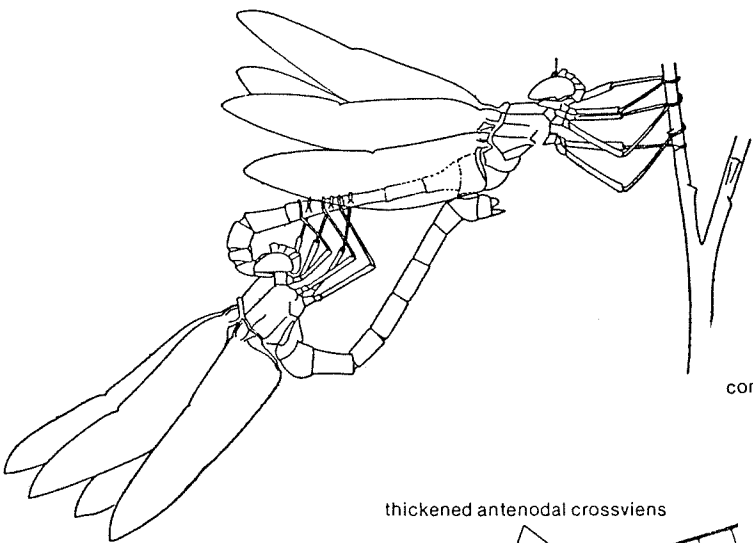


Genealogical tree of Odonata (after Fraser 1957), including extant North American and European families and Epiophlebiidae in Japan and India.

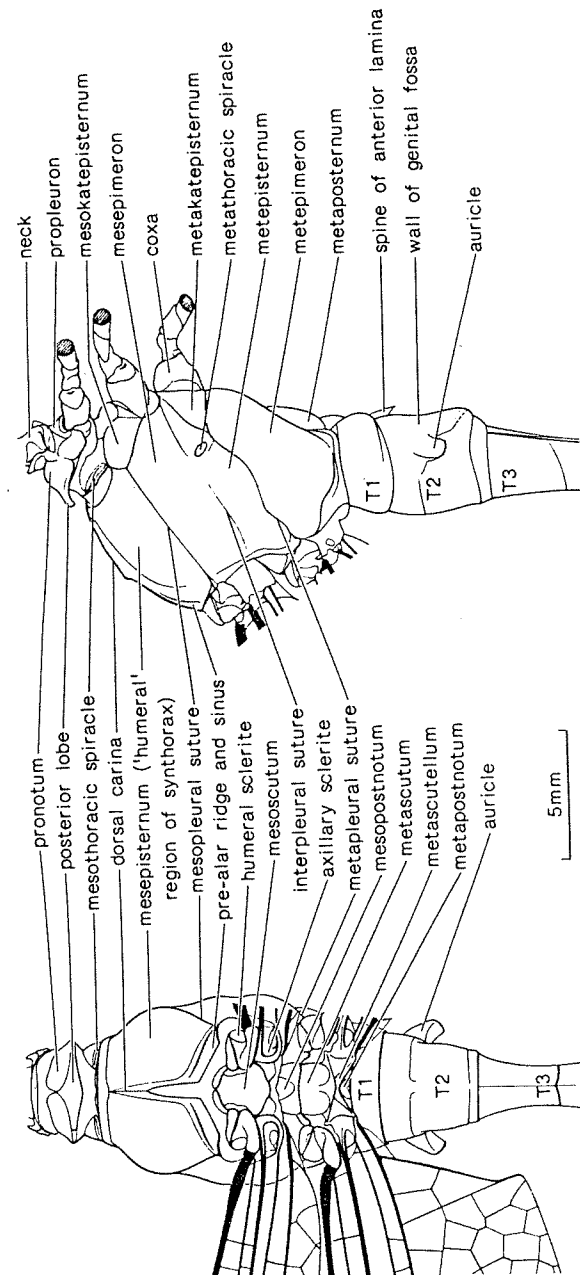
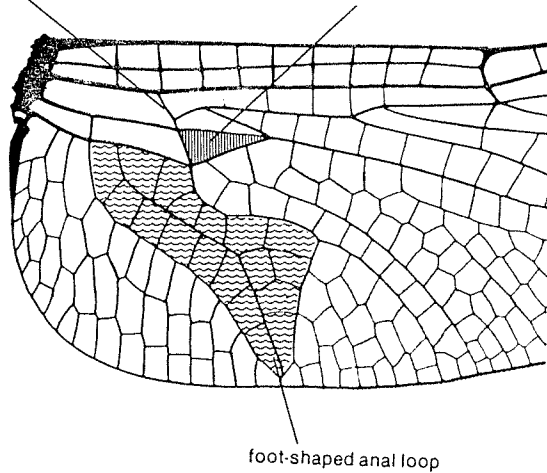
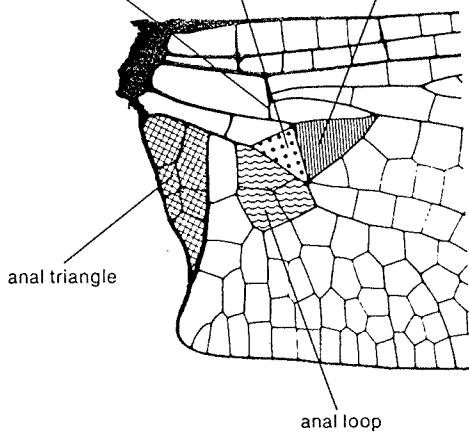
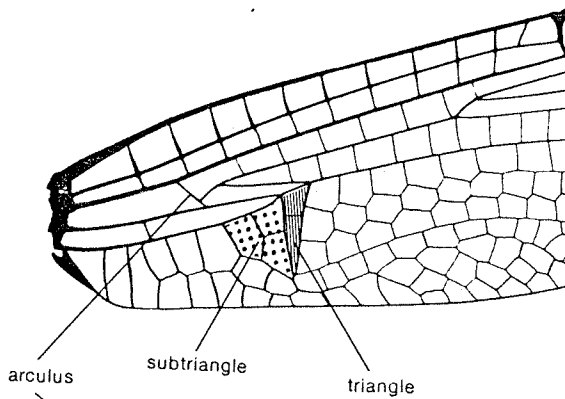
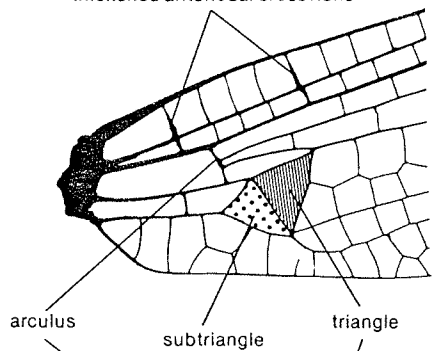
# Order Odonata

## Suborder Anisoptera

### Dragonflies



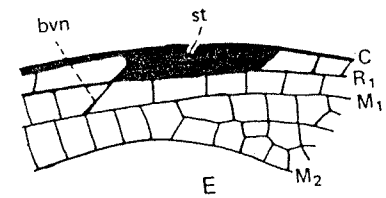
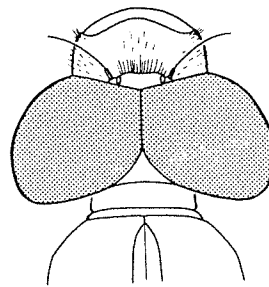
thickened antenodal crossveins



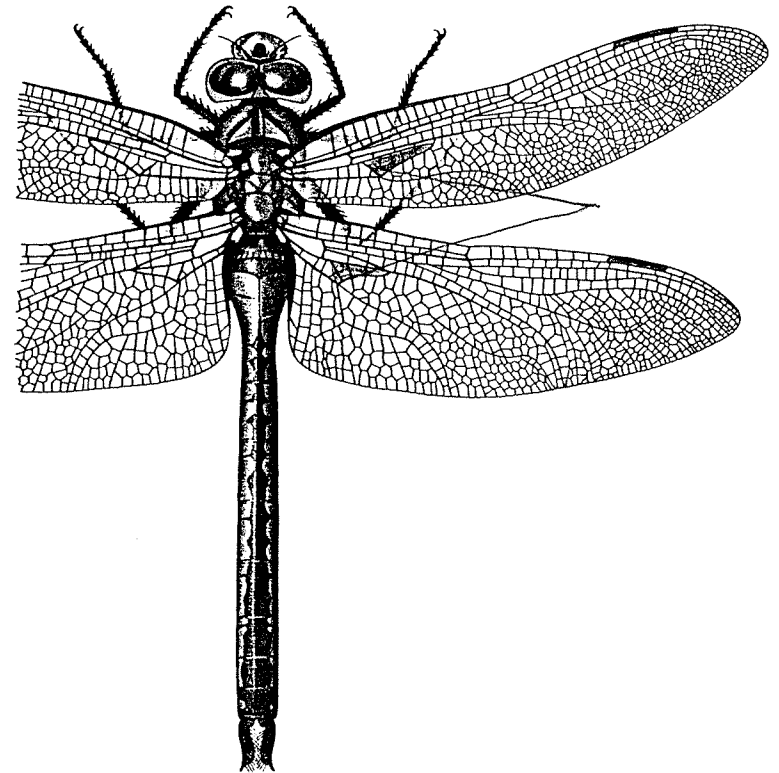
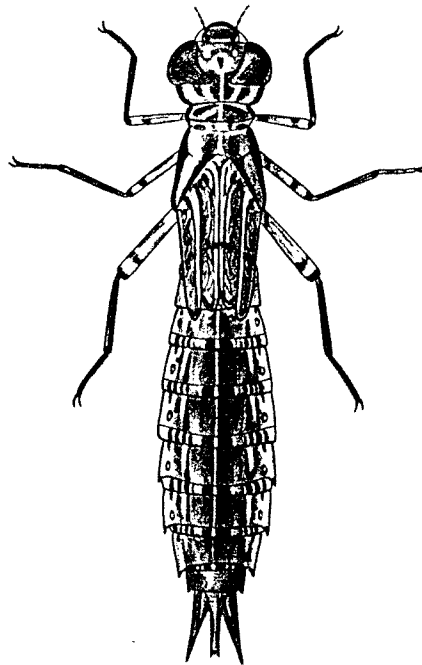
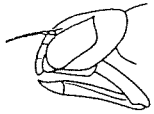
Order Odonata  
Suborder Anisoptera

Family Aeshnidae  
Darners

TERMINAL ANTENNAL  
SEGMENTS SLENDER

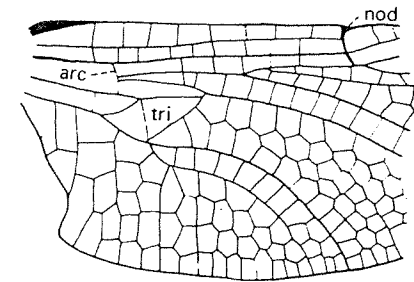
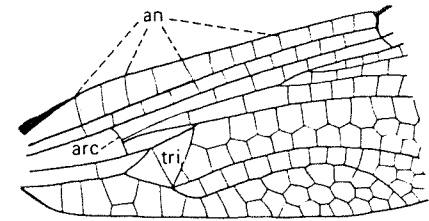
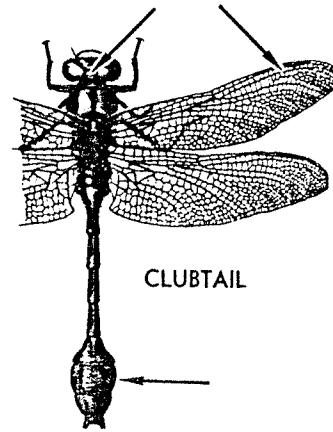
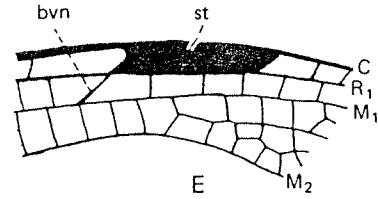
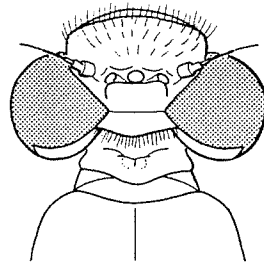
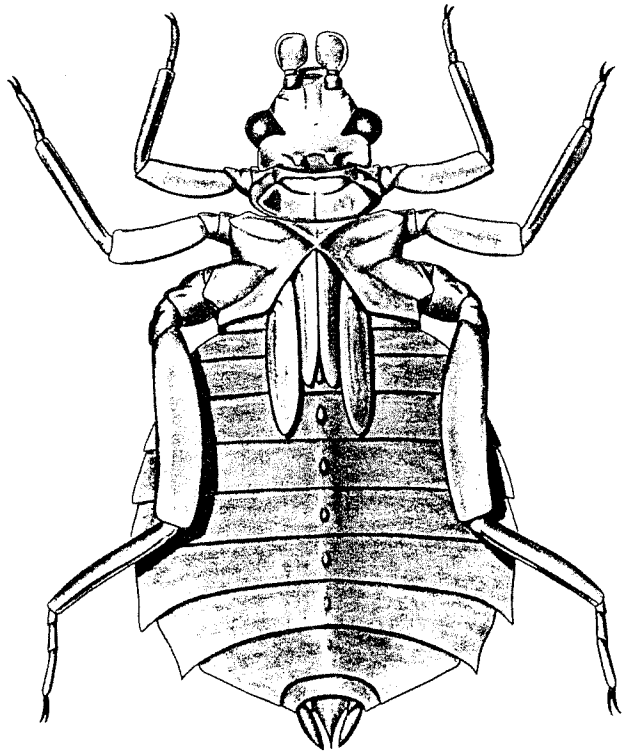


LABIUM FLAT



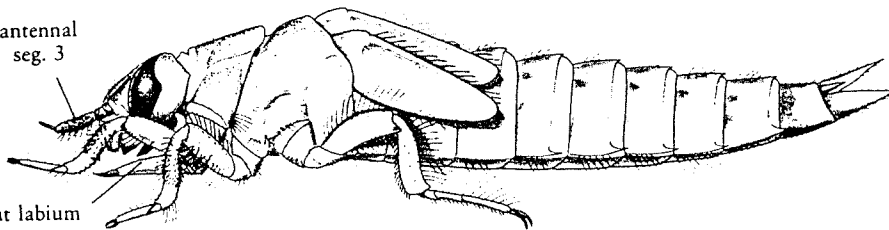
Order Odonata  
Suborder Anisoptera

Family Gomphidae  
Clubtails



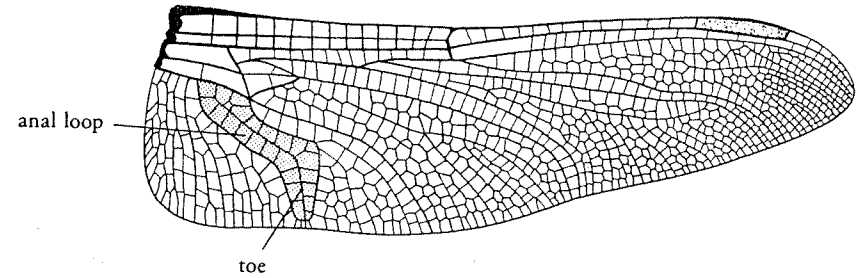
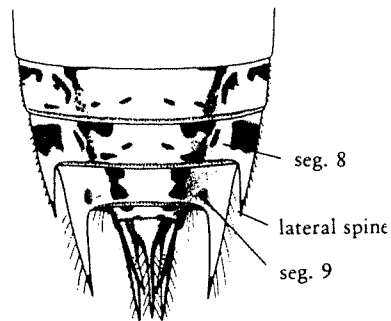
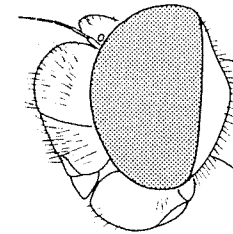
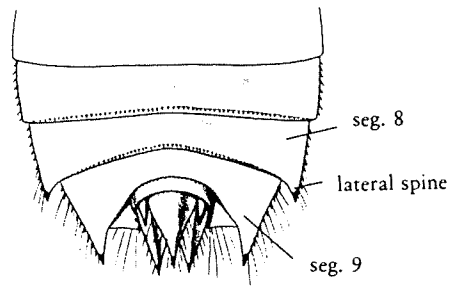
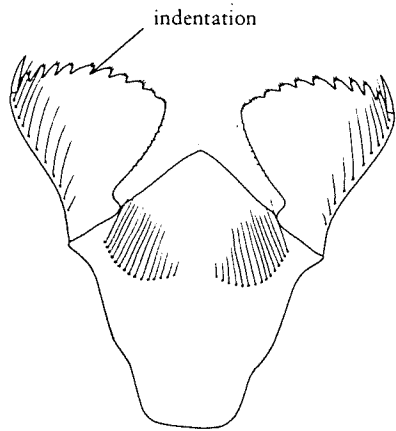
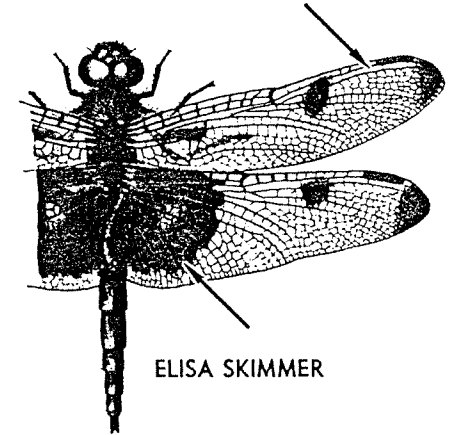
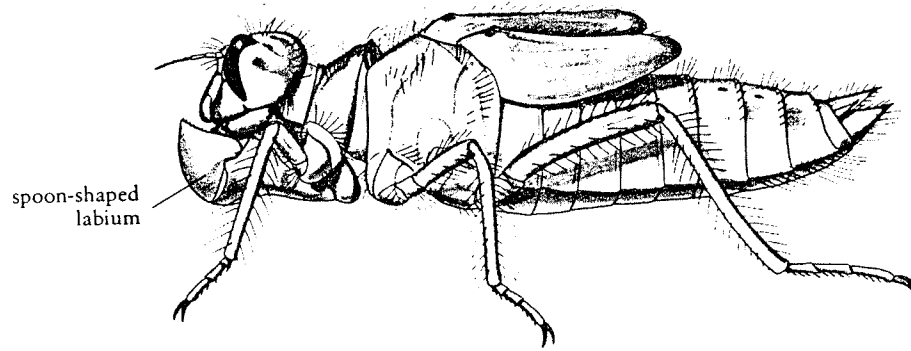
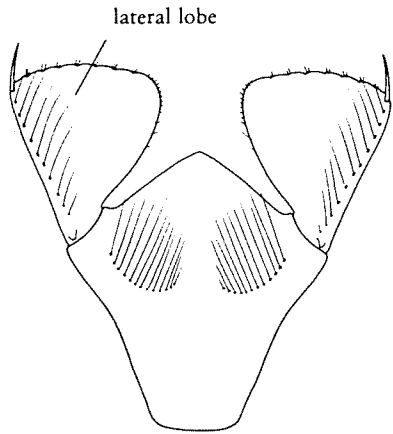
antennal  
seg. 3

flat labium



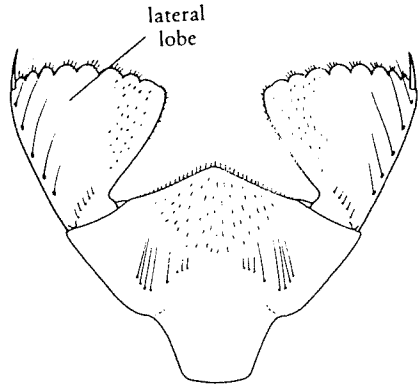
Order Odonata  
Suborder Anisoptera

Family Libellulidae  
Common skimmers

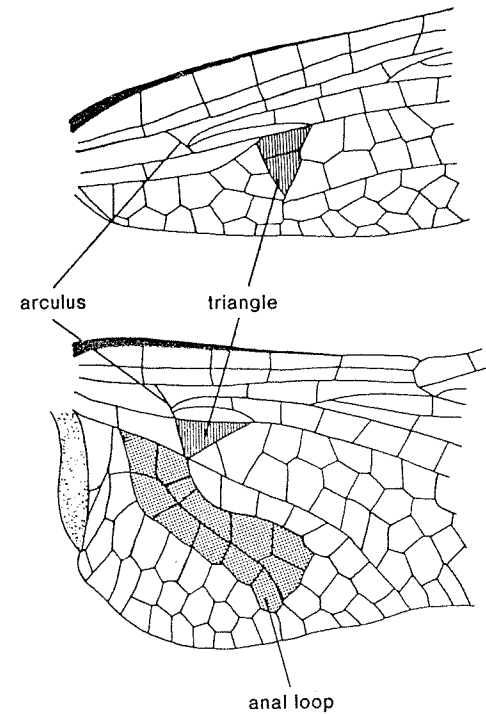
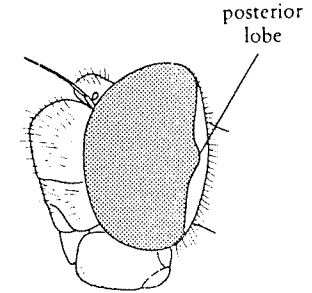
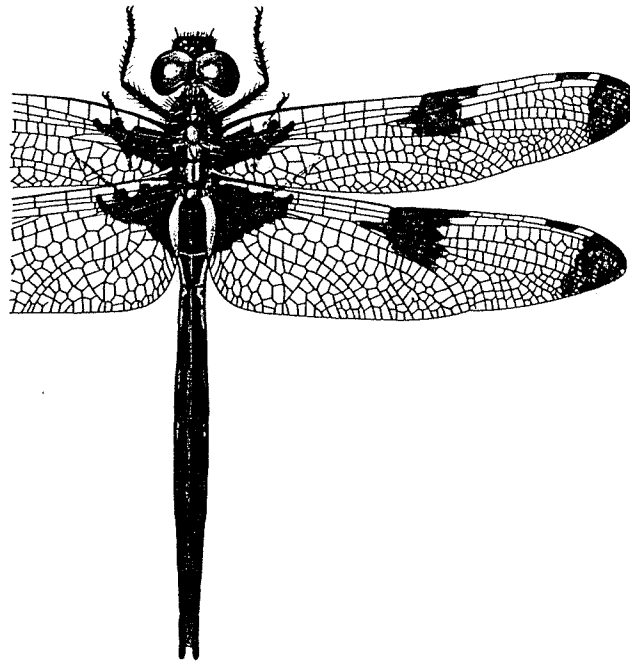
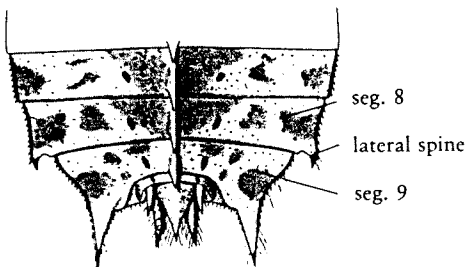
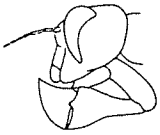


**Order Odonata**  
**Suborder Anisoptera**

**Family Corduliidae**  
Green-eyed skimmers

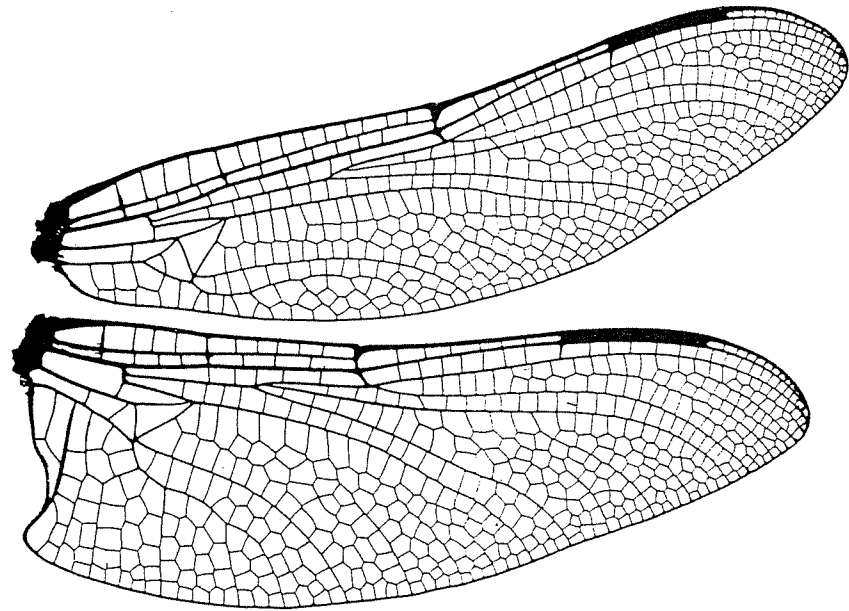
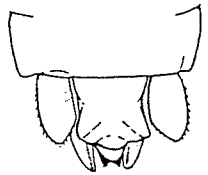
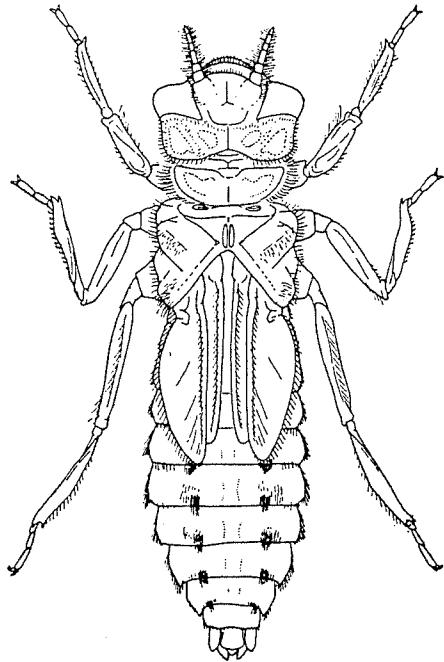
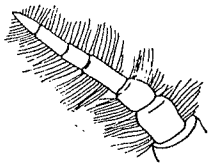
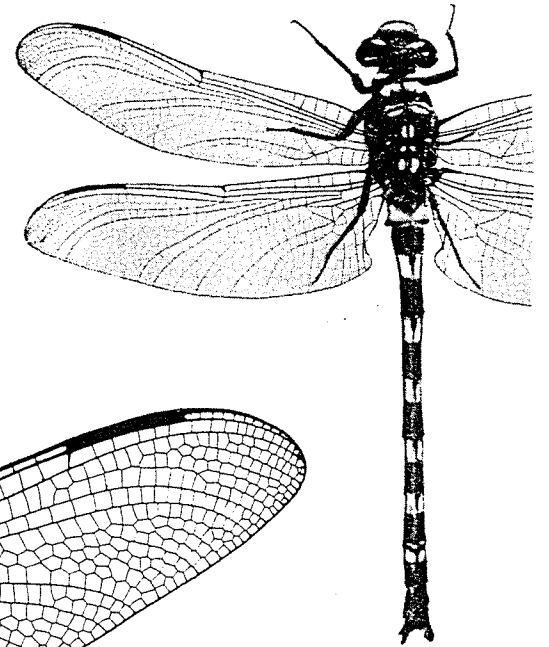
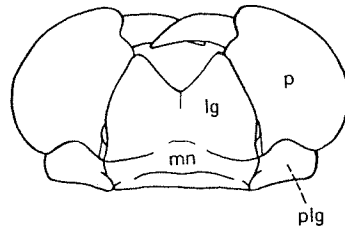
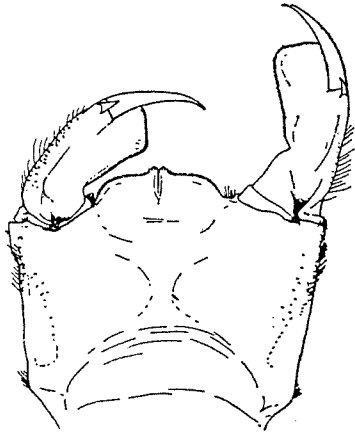


LABIUM SPOON-SHAPED





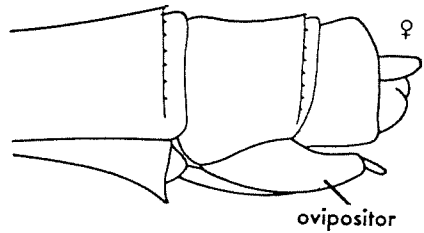
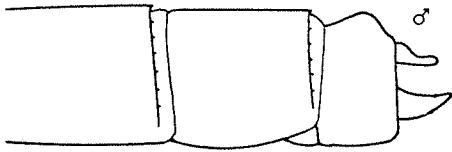
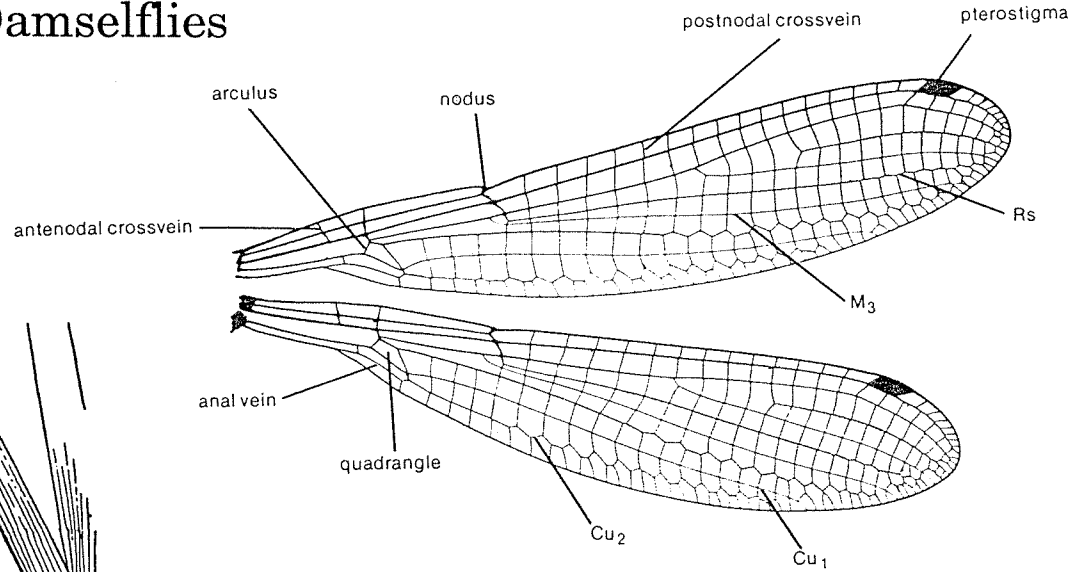
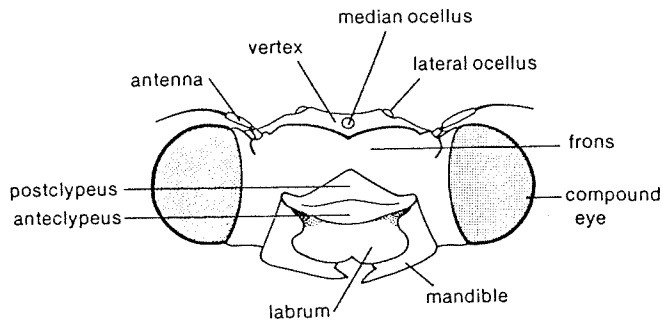
**Order Odonata**  
**Suborder Anisoptera**  
**Family Petaluridae**  
Graybacks



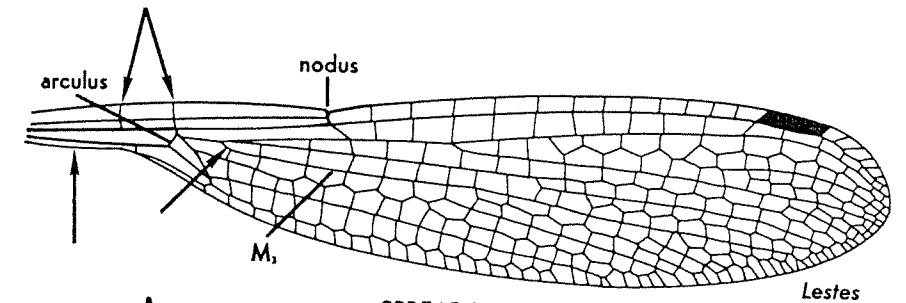
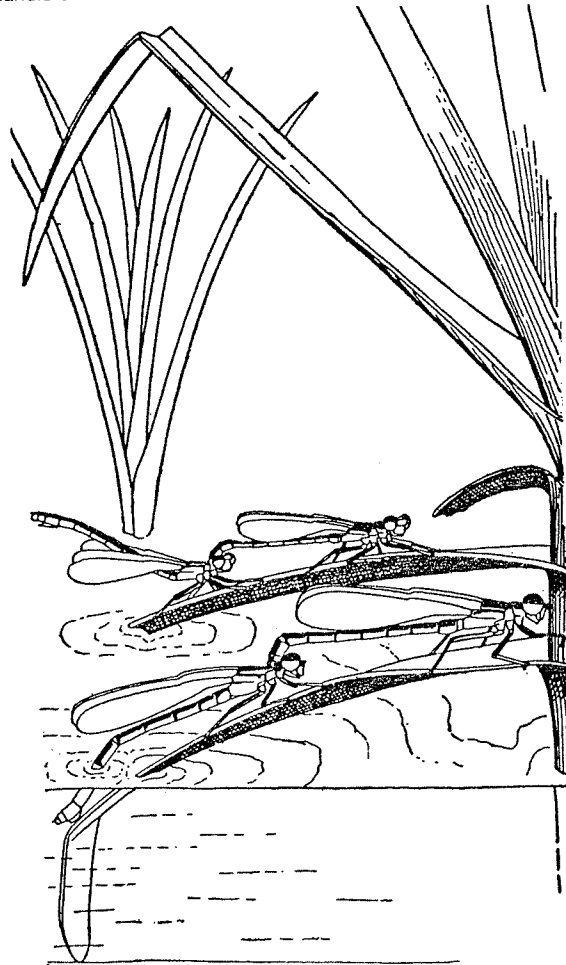
# Order Odonata

## Suborder Zygoptera

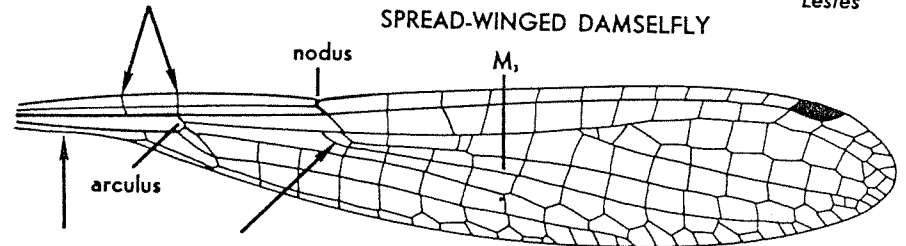
### Damselflies



Apex of abdomen of Damselfly (*Enallagma hageni*)



SPREAD-WINGED DAMSELFLY



NARROW-WINGED DAMSELFLY

*Enallagma*

Order Odonata  
Suborder Zygoptera

Family Calopterygidae  
Broad-winged damselflies

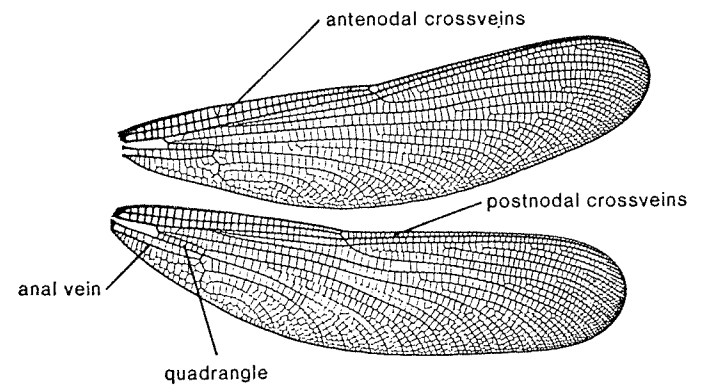
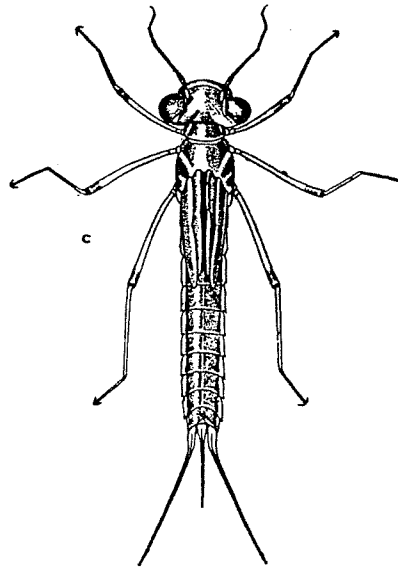
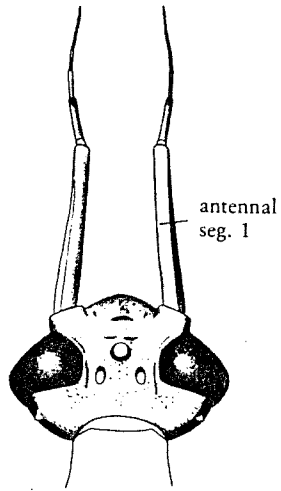
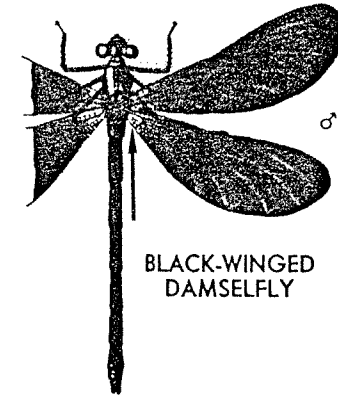
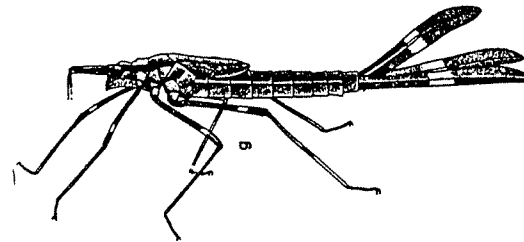
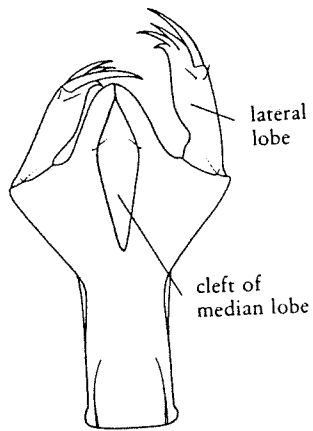
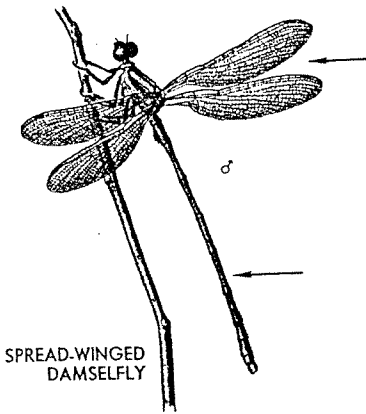
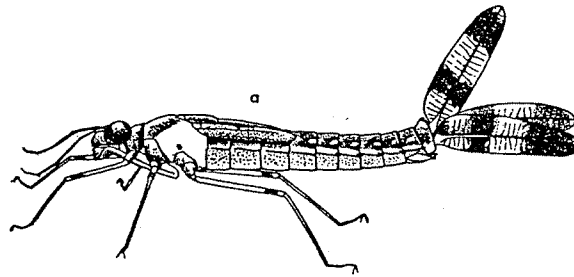
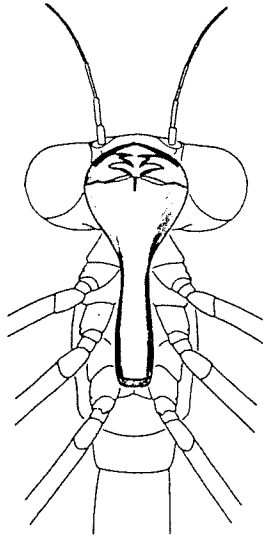


Figure 11.18

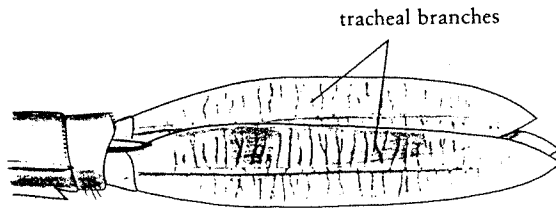


Order Odonata  
Suborder Zygoptera

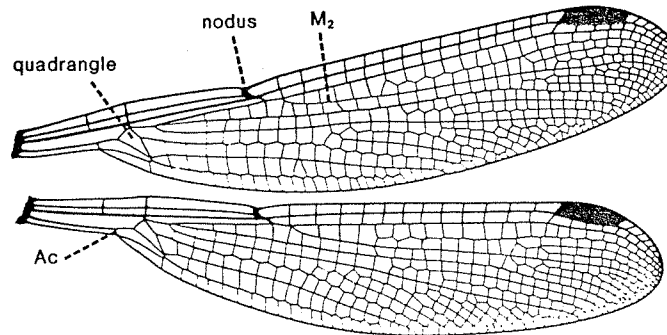
Family Lestidae  
Spread-winged damselflies



SPREAD-WINGED  
DAMSELFLY



tracheal branches



quadrangle  
nodus  
M<sub>2</sub>  
Ac

Order Odonata  
Suborder Zygoptera

Family Coenagrionidae  
Narrow-winged damselflies

