Announcements
Exam next Thursday
Field trip next Tuesday- need to look for drivers officially signed up

Sensory structures in the head

Sensory structures

Eyes
Simple- light sensitive and often used to detect day and night
Compound- detect movement and resolve images

Antennae
Mobile and segmented

Structure
Scape- basal stalk
Pedicel
Flagellum- filamentous and multisegmented

Chemoreceptors and sensillae

Thorax
Dorsal terga called 'nota' (e.g. pronotum, mesonotum)

Composed of three segments

Prothorax
First thoracic segment
Contains first pair of legs (which in some butterflies are modified into sensory structures)
Pronotum often enlarged to partially cover head and mesothorax

Meso and metathorax
Wing bearing regions
Anterior part is where wings are attached
Posterior dorsal side called scutellum
Pleuron divided into two main areas by pleural suture
Episternum- anterior
Epimeron- posterior
Nota divided into three parts (anterior-posterior)

Prescutum
Scutum
scutellum

Three segments primitively similar but can diverge
Legs
One attached to each thoracic segment
Consist of six segments
Coxa
Trochanter
Femur
Tibis
Tarsus—divided into 5 or fewer pseudosegments
Pretarsus
Lateral claws
Pulvilli—pads, often with setae
Lateral pulvilli
Medial lobe
Arolium
Empodium in flies

Insect larvae have abdominal prolegs with distal hooks

Wings
Flap-like projections of the cuticle
Primitively 4 wings
Two to metathorax and two to mesothorax
Forewings
Leathery forewings in cockroaches, grasshoppers and earwigs
Hardened wing cases called elytra in beetles
Hindwings
Tend to be smaller but sometimes these are the only functional wings
Modified in flies to halteres, balancing organs
Often folded when not being used

Tubular veins
Contain tracheae, blood vessels, nerve fibers
Longitudinal major veins or supporting cross veins
Veination

Groundplan of six veins

Anterior

Costa- never branches
Subcosta- branches sometimes into two

Radius-branches into several parts towards apex
Media- also branches out
Cubitus- also branches
Anal- also branches

Cells are areas of wings delimited by veins

Open- extend to margin
Closed- surrounded by veins

Veination often genus or species specific
Homologies only recently recognized and nomenclatures may differ among orders

Abdomen

Least tagmatization of the body regions

Location of large and conspicuous spiracles

First seven segments-progenital

Primitively with appendages

Aquatic insects
Silver fish

Terminalia

Segments 8 & 9- Bear genitalia appendages

Female

True ovipositor- egg laying structure
Gonopore on segment 8
Internal structures for receiving male copulatory organs
Morphology can be species specific

Male

Copulatory organ called aedeagus
May function in clasping as well as sperm transfer
Often used as species specific character

Segment 10- no appendages

Segment 11- cerci

May be consist of undifferentiated segments
May be modified into forceps like in earwigs