Week Eleven Notes

(11/1-11/5)

November 11, 2004
Class Insecta:

- **Subclass Apterygota** – w/o wings – collembola, silverfish etc. Furculum springs the spring tail into the air with amazing agility.

- **Subclass Pterygota** – w/ wings

**Order Ephemeroptera** (appear then vanish – ie. Ephemeral)

- **May flies**
  - No Mouth parts as adults
  - Aquatic – F.W.
  - Spend most of life as nymph in H20
  - Hatches – spring
    - Male and Female emerge, male mates then dies within 24hrs
    - Female lay eggs in H20 before death
adult

Larval may fly
Order Isoptera (similar wings)
→ Termites – colonial → social structure Eusocialtiy
→ Caste System
  • Workers
  • Queen
  • Soldiers
→ Break down wood or cellulose → sugar
→ bacteria
insect itself does not produce cellulase
We produce alpha amylase that can break down starch not:
Cellulose

***Protozoan within termite breaks down cellulose***

some rodents have a Cecum – “blind sac” – protozoans live in here, breakdown wood fiber (protozoa produce cellulose many rodents are Caecotrophic – eat feces derived from the cecum.

Order Hymenoptera (membrane wing)
• Bees, wasps
• Furculum springs the spring tail into the air with amazing agility.
Order Siphonaptera

- Flea
- Lost wings through evolutionary change

Life Cycle of Fleas

- EGG
- MATE
- LARVA - feed on organic matter
  [Instars - stages]
  Molting = ecdysis
- PUPA - Arrested Development - Stop development for period of time.
  Stimulation - chemical or mechanical (Pupate)
- ADULT

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• Intermediate host is flea for the cestode: *Dipylidium caninum*
• Definitive Host – Dog
Dipylidium caninum

- Scolex
- Adult
- Egg
- Larval stage
- Hexacanth embryo
- Cysticercoid
- Contamination by ingestion of the infected flea
- Dog / Man
- Packet of eggs with the embryonic membrane released after disintegration of the proglottid
- External environment
- Arthropods (Fleas)
November 3, 2004

Class Insecta

Order Anoplura

$\rightarrow$ Lice

$\rightarrow$ Pthirus pubis = crab louse   Tarsi = Feet
$\rightarrow$ Pediculus humanus body & head lice
   Transmits Typhus = Rickettsia
Order Hemiptera
  Family Cimicidae
  Bed Bugs
  Genus – *Cimex*
Order Diptera – two winged insects

→ My favorite maggot
***Congo Floor Maggot *Auchmeromyia luteola*
  - Book by Zumpt “Myiasis” – infected by maggots
  - Larviparous – larva born
  - Sarcophagidae
    - Flesh Flies
  - *Stomoxys calcitrans* = Stable Fly bites people around Lincoln etc…
  - *Musca domestica* = Housefly - Fly specs are fly barf and just might be some dog doo doo on your plate!
  - Bot Flies – Genus *Cuterebra*
Adult *Cuterebra* – no mouth parts!
Family Tabanidae *Tabanus*

- Horsefly
- Deerfly
  - Cutting mouthparts
  - Females feed on blood
Family Culicidae Mosquitoes

- Genus *Anopheles*

Anophilene mosquito taking blood meal

*Photo: John R. Clayton*
November 5, 2004

*Pthirus pubis* = butterfly of love (crab louse)

**Anthropods**

Subphylum Crustacea

~ 30,000 species – LOW

- Lobsters-Crabs-Roly Polies-Barnacles-Gribbles

**Synapomorphies**

- 2 pair of antennae
- Biramous appendages
- Varying #’s of legs
- Grow-throughout their life

Molt → **Ecdysis**

KNOW Crayfish

Carapace, 2 pair antennae, walking legs, swimmerets

**Class Branchipoda**

- Brine Shrimp – respire via gills on legs
- Daphnia – water fleas

**Class Maxillopoda** (Jaw feet)

- Ostercods – clam shrimp
- Copopods – high in diversity
- Intermediate host for many parasites
  - *Dracunulus*
  - *Diphyllobothrium*

**Class Cirripeda**

- Barnacles

**Class Malacostraca**

- Largest in # of species
- Decapods
  - Crabs
  - Lobster
Sub Class Isopoda
- armadillidium (Roly Poly)

Thorny headed worm (intermediate host is roly poly)

***Chap 13 not need to know for test

Phylum Echinodermata (spiny skinned animals)
- Deuterostomes

Protostome

Deuterostome

- Pentamerous – 2nd dary Radially symmetrical → Primitively bilaterally symmetrical

- Sea stars – NOT starfish
Also - See book for good images of these:
Pedicellaria are the small pincer-like organs on the outer part of sea stars and sea urchins that can both catch prey and also clear off debris, like sand from the *ABORAL* part of the animal. The Aboral surface is NOT the oral surface. Note Aboral vs. Oral --