

OCN 201 Biology Lecture 5: Invertebrates

- I. **Placozoa**
 - A. *Morphology: Flattened disks, but can change shape, few cell types*
 - B. *Habitat – found colonizing surfaces, natural range not well known*
- II. **Porifera (= pore bearer): Sponges**
 - A. *Morphology*
 - 1) Encrusting, tube, or vase shapes
 - 2) The “skeleton” consists of:
 - B. *Habitat*
 - 1) Benthic
 - 2) Sessile (sessile =)
 - C. *Feeding*
- III. **Cnidarians: Anemones, Corals, Jellyfish**
 - A. *Morphology: Two basic shapes:*
 - B. *Habitat*
 - 1) Polyps are:
 - 2) Medusae are:
 - C. *Feeding:*
 - 1) Carnivorous, predatory
 - 2) Using specialized cells to kill/capture prey called _____
 - 3) Tentacles retract to bring prey to mouth
 - 4) Digestive cavity has only one opening
 - D. *Notes: The box jellies (cubomedusae) have particularly potent toxins. They arrive in swarms on leeward shores 9-10 days after the full moon. Australian species Chironex usually lethal (3-4 minutes)*
- IV. **Ctenophora (= comb bearer)**
 - A. *Morphology*
 - 1) Gelatinous, spherical or ovoid
 - 2) Some odd ones are ribbon shaped
 - 3) All have 8 comb rows. Bands of cilia used for locomotion
 - B. *Feeding*
 - 1) Predatory. Most feeding on:
 - 2) Capture prey using tentacles lined with:
 - 3) Exception:
 - C. *Habitat: Almost all pelagic (epi- to bathypelagic). A few benthic ones creep on the bottom*
- V. **Flat Worms (Platyhelminthes)**
 - A. *Major marine class: Turbellarian*
 - B. *Carnivorous or Herbivorous*
 - C. *Benthic infauna that move by cilia, or undulations*
- VI. **Round worms (Nematoda)**
 - A. *Found all over (marine, freshwater, terrestrial)*
 - B. *VERY abundant free-living in the sediments (infauna)*
 - C. *Have a flow-through digestive system*

VII. Mollusca (= soft bodied)**A. Gastropoda (e.g., snails)**

- 1) Primarily benthic (on rocky substrates), A few pelagic forms, Example:
- 2) Most have shells, but some have lost shell. Example:
- 3) Feeding:
- 4) Have specialized file-like scraper in mouth called:

B. Bivalvia (e.g., clams, mussels)

- 1) Many burrowing types are infauna
- 2) Some bore into wood or coral
- 3) Some others (e.g. mussels) attach to rock surfaces with:
- 4) Feeding:

C. Cephalopoda (squid, octopus)

- 1) Well developed eyes and brain
- 2) Only one type still has external shell:
- 3) Feed as predatory carnivores
- 4) Have a radula (like gastropods), but also a beak for ripping and tearing food
- 5) Special Adaptations:

VIII. Segmented Worms (Annelida)**A. Major marine class = Polychaetes****B. Polychaetes mostly benthic, few planktonic****C. Predatory epifauna, or tube dwelling infauna (deposit or suspension feeders)****IX. Arthropoda (= jointed foot)****A. Examples: horseshoe crabs, sea spiders, barnacles, crabs, lobster, copepod, amphipods****B. Have an exoskeleton that provides protection and leverage****C. Exoskeleton requires **molting** for growth****VII. Echinodermata (= spiny skin)****A. Examples: sea stars, brittle stars, sand dollars, sea urchins, sea lilies, sea cucumbers****B. Symmetry****C. Special Adaptations:**

- 1) Water vascular system:
- 2) Tube feet:

D. Feeding: Most are: _____ but Sea stars are also _____