

## 4<sup>th</sup> Zoology Study Guide

### Mollusca

- Polyplacophora (chitons)
- Gastropoda (slugs, snails, abalone, limpets, nudibranchs)
- Bivalvia (clams, oysters, scallops, mussels)
- Cephalopoda (octopi, cuttlefish, squid)

### Annelida

- Polychaeta (Christmas tree worms, sand worms)
- Clitellata
  - Oligochaeta (earthworms, Tubifex)
  - Hirudinea (leeches)

### Arthropoda

- Chelicerata
  - Arachnida (spiders, scorpions, ticks, mites)
  - Merostomata (horseshoe crabs)
  - Pycnogonida (sea spiders aka pycnogonids)
- Crustacea (crabs, barnacles, pillbugs, Daphnia)
- Hexapoda
  - Coleoptera (beetles, weevils, scarabs)
  - Diptera (flies, mosquitos)
  - Hemiptera (true bugs)
  - Hymenoptera (bees, ants, wasps)
  - Lepidoptera (butterflies, moths)
  - Orthoptera (grasshoppers, crickets)
  - Siphonaptera (fleas)

### Myriapoda

- Chilopoda (centipedes)
- Diplopoda (millipedes)

### Echinodermata

- Asteroidea (sea stars, bat stars, sun stars)
- Ophiuroidea (brittle stars, serpent stars)
- Holothuroidea (sea cucumbers)
- Echinoidea (sea urchins, sand dollars)
- Crinoidea (sea lilies, feather stars)

Aristotle's lantern

autotomy / regeneration

beak

book lungs / gills

cheliped / mandible / maxilliped / maxilla / telson / swimmeret

chitin

deuterostomy

diecious / monoecious

drones, queen, worker bees

fate of the blastopore

gastric mill

gills

hermaphroditism

metamerism *vs* tagmatization

nacre

oral / aboral

origin of the coelom

parapodia / setae / clitellum / epitoke / prostomium

pedicellariae / ossicles /dermal branchiae

pentaradial symmetry

pharynx / crop / gizzard / stomach

protostomes / deuterostomes

radial *vs* bilateral symmetry

radial *vs* spiral cleavage

radula / mantle / umbo / periostracum / visceral mass

seminal vesicles *vs* seminal receptacles

spinneret

spongin / chitin / keratin

tagma / tagmata

thorax / head / abdomen/ opisthosoma / cephalothorax.

tracheae

umbo

water vascular system: stone canal / ring canal / lateral canal / ampullae / tube feet

Be able to describe each phylum in a way that applies to most, if not all, of its members more or less equally.

Be able to identify features (or combinations of features) found in each phylum that no other phylum has and describe how they use them to their advantage.

Distinguish between metamerism and tagmatization, making it clear how each advantages its possessors.

What features of Insects (especially the Coleoptera) have made them so successful)?

What is the advantage of complete metamorphosis in insects?

What problems of living and reproducing on land have insects overcome? How do they manage it?

Cite the limitations of open circulatory systems and tell how cephalopods and hexapods avoid those limits.

Compare how the terms "individual" and "colony" are applied to *Volvox*, *Obelia* and *Apis*.