BSC 201L
Lab #8: Crustaceans

Use the text and figures in **Exercise 14 (The Crustacean Arthropods)** to aid your study of the prepared slides and preserved specimens; examine the additional specimens as indicated.

Things to know for Subphylum Crustacea:
Be able to identify tagmata.
Be able to identify head appendages: **antennules** (=first antennae), **antennae** (=second antennae), **mandibles**, maxillules (=first maxillae), **maxillae** (=second maxillae).
Fresh water, marine water, terrestrial?
Male or female?

Phylum Arthropoda – cont'd

Subphylum Crustacea

- tagmata:
  - head and trunk (1°)
  - head, thorax, and abdomen (2°)
  - cephalothorax and abdomen (2°)
- head appendages:
  - 2 pairs of antennae (1st = antennules, 2nd = antennae)
  - 1 pair of mandibles
  - 2 pairs of maxillae (1st = maxillules, 2nd = maxillae)
- **biramous** appendages

Nauplius larva – text p. 218
- first 3 pairs of appendages used for swimming (2 pairs of antennae, 1 pair of mandibles)
- typical, primitive crustacean larva

1. Slide

Class Branchiopoda

Order Anostraca, fairy shrimp, brine shrimp
Fairy shrimp adult – text p. 216
2. Slide (w.m.) – Fig. 14-5

Order Diplostraca (Note: the order is given incorrectly in the lab manual)

Suborder Cladocera, water fleas
Daphnia – text pp. 216-217
- biramous second antennae enlarged for locomotion
- carapace covers thorax and abdomen, but not head

3. Slide – Fig. 14-5
   - notice the eggs or the **ephippia** (resistant cysts) in **parthenogenic** female

Class Ostracoda, ostracods
(Note: this taxon is elevated to a Class, and is NOT a subclass of Maxillopoda as stated in the lab manual)

Ostracods – text p. 215
- carapace covers entire body, including head
- 0-2 pairs of thoracic appendages

4. Slide – Fig. 14-5

Class Maxillopoda

Subclass Copepoda, copepods
- median eye

Cyclops, a FW copepod – text p. 217
- last abdominal segment bears a pair of caudal projections

5. Slide – Fig. 14-5

Subclass Cirripedia, barnacles
- sessile adults; superficially resemble molluscs w/ calcareous plates

Lepas, gooseneck barnacle

6. Preserved specimen

Balanus, acorn barnacle

7. Preserved specimen

Class Malacostraca – text p. 217, Fig. 14-5

Order Isopoda, isopods
- dorso-ventrally flattened
- abdominal appendages bear gills
- females have **marsupium** for brooding eggs

Rollie-pollies (sow bugs, doodle bugs)

8. Preserved specimen

Deep-sea isopod
- scavenger

9. Preserved specimen

Order Amphipoda, amphipods
- laterally flattened
- females have **marsupium** for brooding eggs

Gammarus

10. Preserved specimen

Order Euphausiacea, krill
- thoracic gills are not covered by the carapace
- a prey item of whales

Euphausia pacifica

11. Slide

Order Decapoda, decapods
– 5 pairs of **pereopods** (walking legs) on thorax

Homarus americanus, American lobster

12. Preserved specimen

Penaeid shrimp
– commercially important

13. Preserved specimen

Callinectes similis, lesser blue crab
– last pair of thoracic appendages modified for swimming
– male abdomen is a long, slender Y or T shape
– female abdomen is triangular as juvenile; broadens & darkens at maturity

14. Preserved specimens – male and female

Libinia dubia, spider crab
– abdomen differs between sexes, similar to *Callinectes*

15. Preserved specimen
    – be able to tell the differences between sexes

Crayfish – text pp. 209-216
– males have thickened first swimmerets for copulation

16. Preserved specimen – Figs. 14-1, 14-2, 14-3, 14-4
– LABELS:
  External: antennules, antennae, chela, cheliped, carapace, cephalothorax, abdomen, telson, uropods
  Internal: gills, stomach, midgut gland (=hepatopancreas, =digestive gland), heart

Observations: Examine Crustacea, Crayfish Dissection, and Crayfish Appendages Biosmounts. (Not necessary to draw.)

*****

FOR NEXT LAB MEETING:
– download handout for Lab #9 and read **Exercise 16** (The Echinoderms) and **Exercise 17** (Phylum Chordata)
– write out each taxonomic summary in your Laboratory Specimen Notebook BEFORE lab