ANIMAL BIOLOGY (1604) LABORATORY

Week of 7 September
Phylum Porifera & Phylum Cnidaria

Read pages 73-75, 81-88 in your lab manual before coming to lab.

Objectives:
- Recognize the basic structure and organization of sponges.
- Understand the pattern of water flow through sponges.
- Recognize the three basic body types of sponges.
- Recognize and distinguish between the three cnidarian classes.
- Understand the differences between the polyp and medusa forms.

Exercise 5-2: Sponge Anatomy

Phylum Porifera (sponges)
- Sedentary aquatic (mostly marine) animals
- Lack true tissue, organs, and body symmetry
- Body perforated by numerous pores for water flow

Scypha: longitudinal and cross-section slides (Figs. 5.1, 5.2)
Identify the following structures:

- Apopyles
- Canals
- Choanocytes
- Incurrent canals,
- Osculum
- Ostia
- Prosopyles
- Radial canals
- Spongocoel

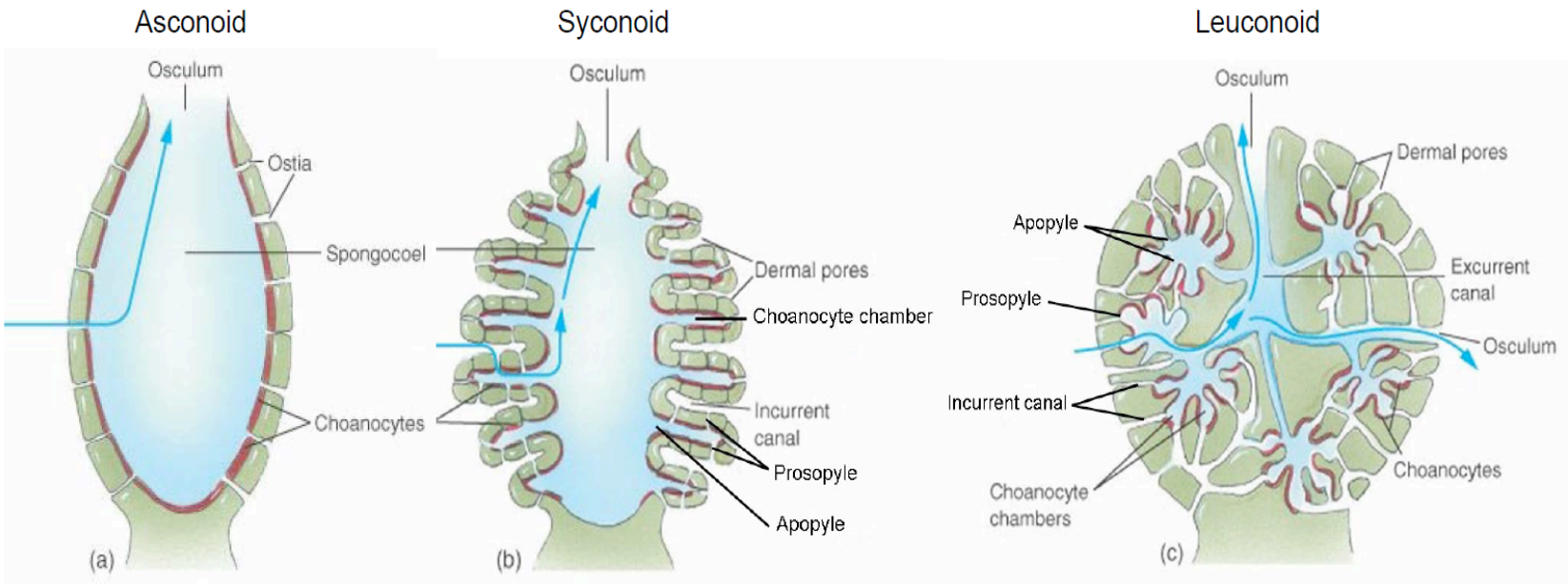
Know the order in which water flows through the above structures

Know the three basic sponge body types

- Asconoid
- Syconoid
- Leuconoid

*see following page

Sponge Body Types



Which body type does not have a spongocoel?

Which body type has more than one osculum?

Where do choanocytes occur in each body type?

Obtain slides of *Leucosolenia*, *Sycon*, and a commercial bath sponge.
- Which body type does each sponge have?
- What characteristics did you use to identify each body type?

**Record your answers in the chart below and have your TA check your identifications.*

Leucosolenia:

Sycon:

Commercial bath sponge:

Lab Manual: Fig. 5.1-5.3
Lab Atlas: Fig. 4.1-4.13

Review Questions

All Questions pg. 75
Questions 1-3 pg. 80

Exercise 6-1: Hydrozoan Anatomy

<u>Phylum Cnidaria</u> (hydras, true jellyfish, sea anemones, colonial corals)
- Two distinct morphological forms: **polyp** & **medusa**
- Sessile, free floating, or free swimming
- Gastrovascular cavity (*coelenteron*)

Class Hydrozoa (hydra, *Obelia*, Portuguese man-o-war)
- Mainly marine
- Both **polyp** and **medusa** stages
- Polyp colonies in most

Hydra: whole mount slide (*Atlas* Fig. 5.3)
Identify the following structures:

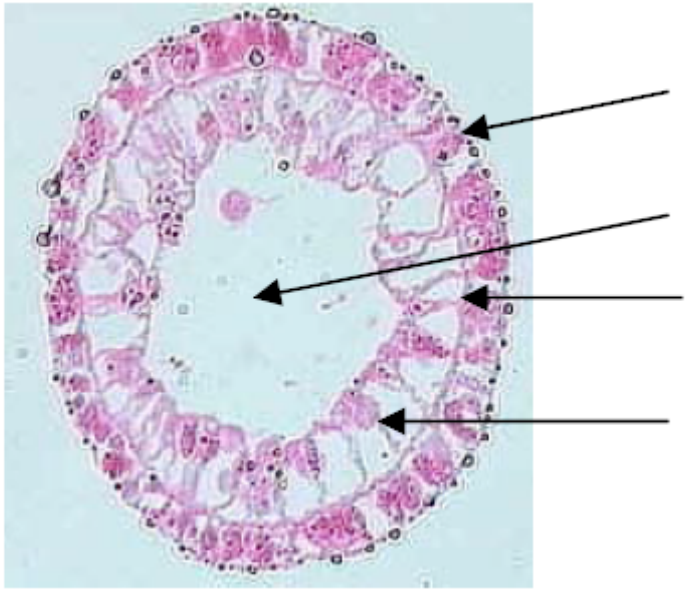
- Basal disc
- Hypostome
- Tentacles

Hydra: longitudinal-section slide (*Atlas* Fig. 5.2)
Identify the following structures:

- Gastrovascular cavity/coelenteron
- Mouth
- Epidermis
- Gastrodermis
- Mesoglea

Hydra: cross-section slide (*Atlas* Fig. 5.5)
Identify the following structures and label the image below:

- Gastrovascular cavity/coelenteron
- Epidermis
- Gastrodermis
- Mesoglea

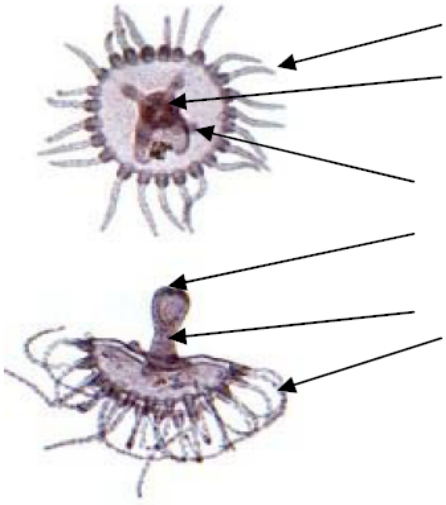


Obelia hydroid colony: whole mount slide (Fig. 6.3)
Identify the following structures:

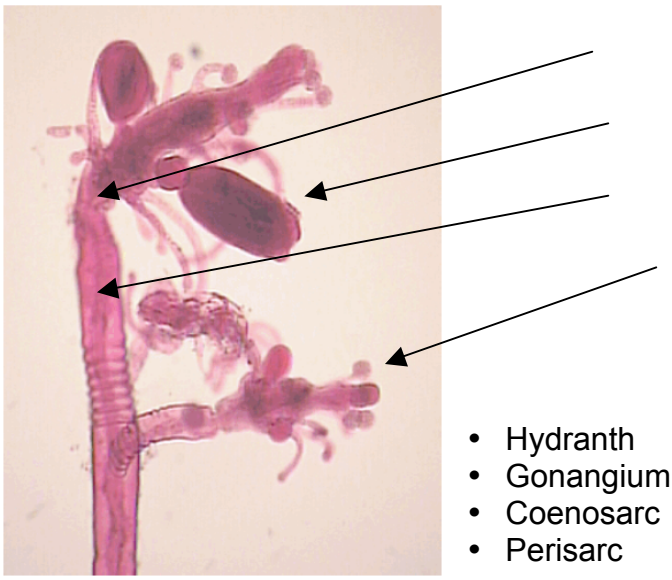
- Hydranth
- Tentacles
- Hypostome
- Gonangium
- Medusa buds

Identify the following structures and label the images below (*Atlas* Fig. 5.12 & 5.13):

- Tentacles
- Manubrium
- Mouth
- Gonads



Pennaria hydroid colony: whole mount slide
Label the relevant features on the image below (similar to *Atlas* Fig. 5.11)



- Hydranth
- Gonangium
- Coenosarc
- Perisarc

How does the *Pennaria* hydroid colony differ structurally from the *Obelia* hydroid colony?

Exercise 6-2: Scyphozoan Anatomy

Class Scyphozoa
- Marine costal waters
- **Polyp** stage restricted to small larval form

Aurelia (jellyfish): plastic mount and preserved specimen (Fig. 6.4)
Identify the following structures:

- Mouth
- Oral arms
- Marginal tentacles
- Gonads
- Gastric pouches
- Radial canals
- Circular canal

Exercise 6-3: Anthozoan Anatomy

Class Anthozoa
- Marine costal waters
- Solitary or colonial **polyps**
- No **medusa** stage

Metridium (sea anemone): preserved specimen (Fig. 6.6)
Identify the following structures:

- Tentacles
- Oral disc
- Mouth
- Pedal disc

Observe displayed Coral specimens: dry specimens (Fig. 6.5)

Lab Manual: Fig. 6.1-6.6
Lab Atlas: Fig. 5.1-5.36

Review Questions

Questions 1-4 pg. 92
All Questions pg. 83 & 85

**Read pages 93-100, 107-110 in your lab manual before coming to lab next week*