

Simple Animals

Metazoa (multicellular animals)

Simple animals Sponges (Phylum Porifera)



Cellular level of organization

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Sponges

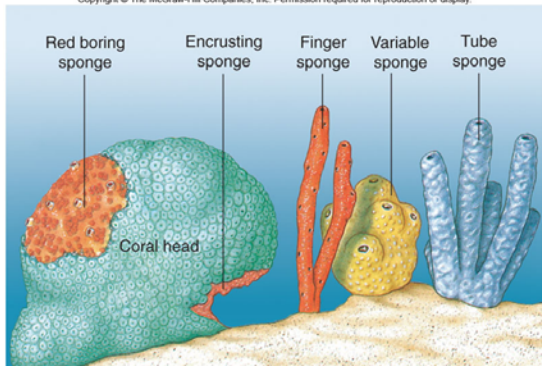
Phylum Porifera

- Loose aggregation of cells
- Many pores and canals for filter feeding
- Skeleton of spicules
- Sessile
- Mostly marine and all aquatic
- Large range in size and color

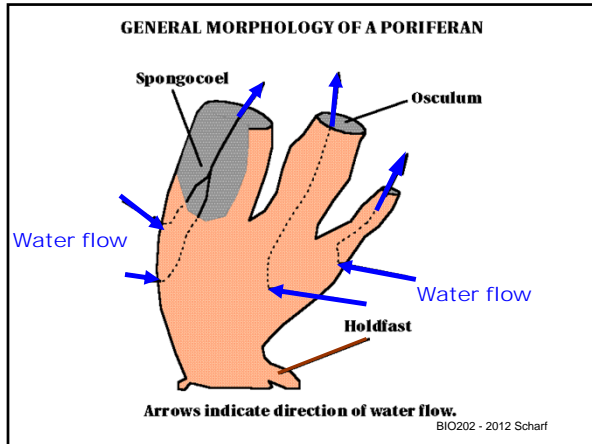


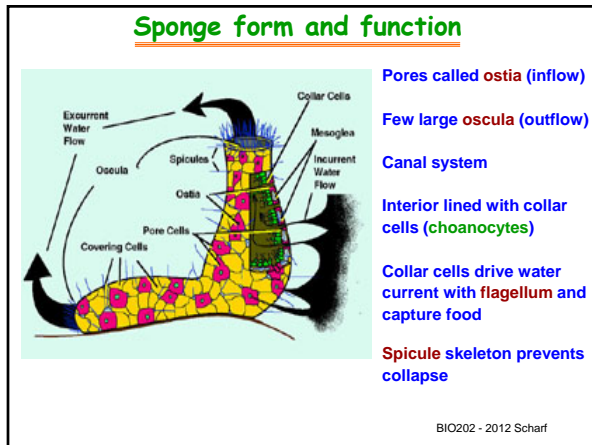
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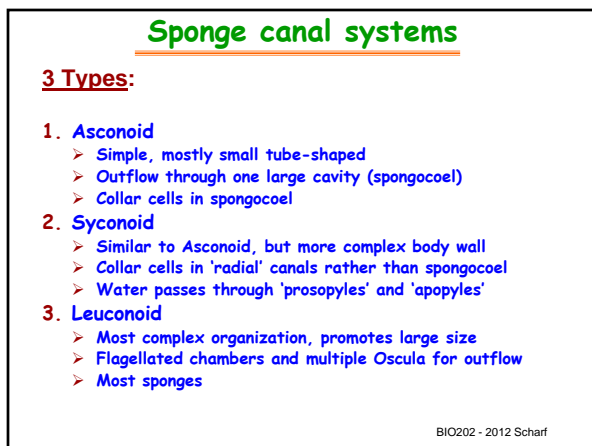
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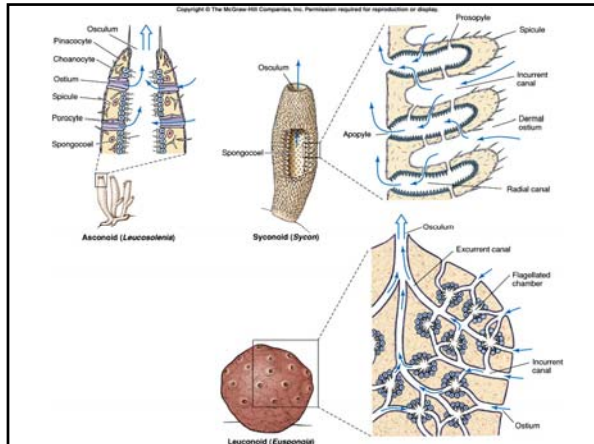


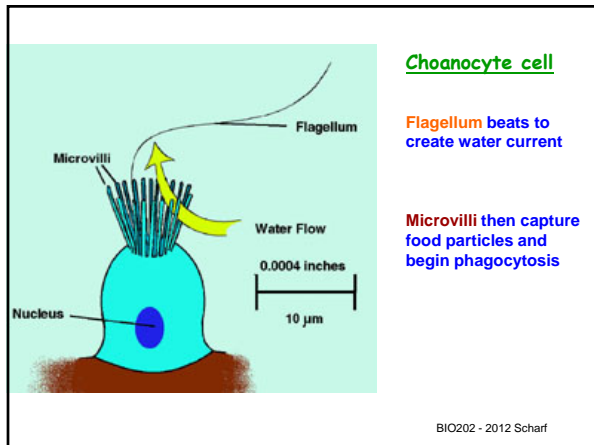
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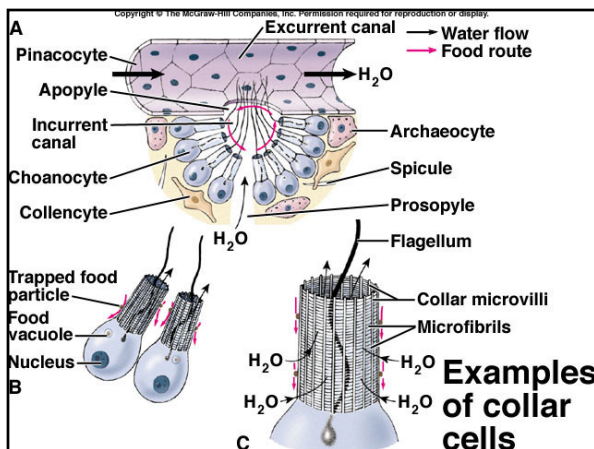








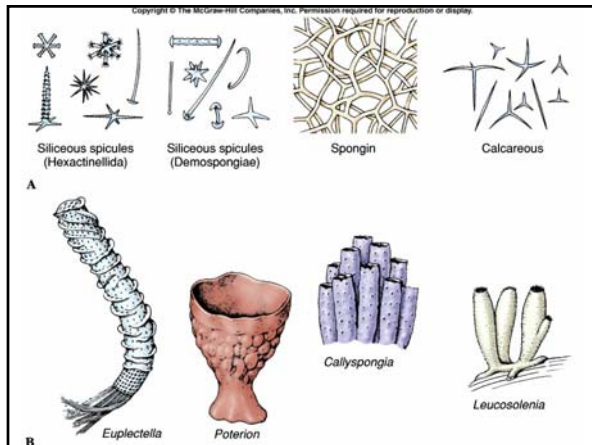


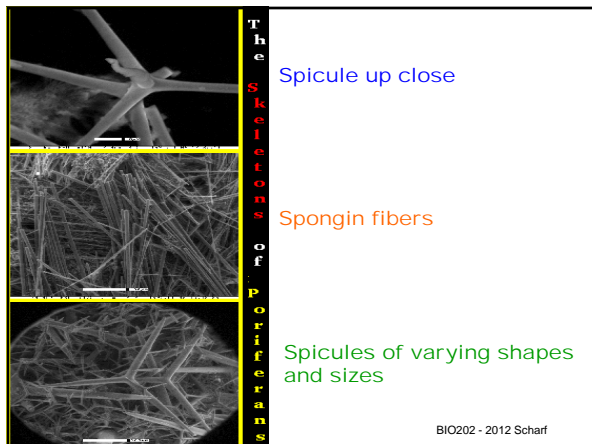


Sponge skeletal structure

1. **Spongin**
 - > Type of collagen
 - > Many forms: spicules, fibers, filaments
2. **Siliceous spicules**
 - > Many structural variations and shapes
3. **Calcareous spicules**
 - > Possess one, three, or four rays
4. **Combination of spicules and spongin**

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Sponge physiology and reproduction

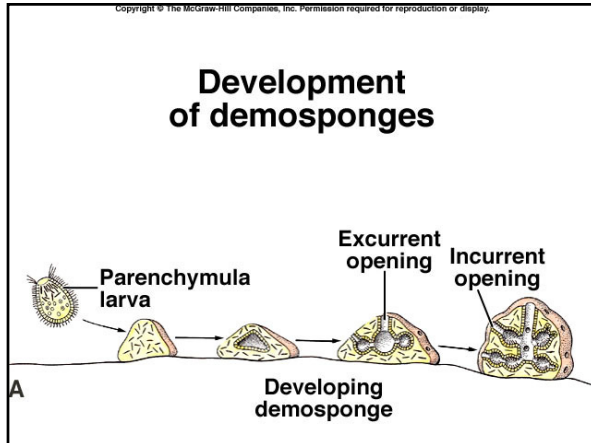
Physiology

- Completely dependent upon water filtration
- Feed on detritus, plankton, bacteria
- Intracellular digestion, respiration & excretion by cell diffusion

Reproduction

- Both asexual and sexual
- Asexual by bud formation
- Sexual: many sponges are hermaphroditic, having both male and female sex cells (**monoecious**)
- Ability to repair injuries and regenerate lost parts

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3 Classes of sponges

- 1. Class Calcarea**
 - Calcium carbonate spicules (straight, 3 or 4 rays)
 - All types of canal systems
 - Small, marine shallow water
- 2. Class Hexactinellida**
 - Six-rayed siliceous spicules
 - Deep-sea
- 3. Class Demospongiae**
 - 95% of all living sponges
 - Siliceous spicules (but not six-rayed) or spongin or both
 - Only leuconoid canal system
 - Bath sponges (spongin only)

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***Mycale laevis* (class Demospongiae)**



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***Clathrina Canariensis* (class Calcarea)**



