

Advanced Cell Biology Lab 2.

Diversity of cells under the light microscope

February 7th, 2011

1. Use Chapter 1, pages 12–27 as reference.
2. Always use highest magnification ($\times 40$ lenses), try to keep scale between slides.
3. Prokaryotic cells of *Anabaena* sp., phylum Cyanobacteria. Procedure: prepared slide. Assignments:
 - (a) Draw 2–3 filaments with 5–7 cells in each
 - (b) **Label:** cell walls, cytoplasm, cytoplasm inclusions, heterocysts (specialized large cells used for reproduction). Note that *Anabaena* cells are among largest prokaryotic cells. Please maintain the scale with other slides.
4. Eukaryotic amoeboid cells of protist *Amoeba proteus*, phylum Amoebozoa. Procedure: prepared slide. Assignments:
 - (a) Draw 2–3 cells
 - (b) **Label:** membrane, cytoplasm, vacuoles / vesicles, cytoplasmatic inclusions, nucleus, nucleolus (if visible). Emphasize the unstable form of cell.
5. Eukaryotic flagellate cells of photosynthetic protist *Euglena* sp., phylum Discoba. Procedure: prepared slide. Assignments:
 - (a) Draw 2–3 cells
 - (b) **Label:** cell wall (pellicle), flagella (if visible), chloroplasts (if visible), nucleus, cytoplasm, cytoplasmatic inclusions.
6. Plant cells of liverwort *Riccia natans*, phylum Bryophyta. Procedure: prepared slide. Assignments:
 - (a) Draw 5–7 epidermal cells which are located on the plant surface.
 - (b) **Label:** cell wall, chloroplast, cytoplasm, vacuole, nucleus (if visible). Emphasize the tissue structure of plant body.
7. Animal cells of coelenterate *Hydra* sp., phylum Cnidaria. Procedure: prepared slide. Assignments:
 - (a) Draw 3–5 epidermal cells of tentacle
 - (b) **Label:** nucleus, cell borders / membrane, cytoplasm. Emphasize the tissue nature of animal body.