**Introductory Medical Microbiology**

**Laboratory Notes**

**BIOL 2161L**

**EUKARYOTIC MICROORGANISMS**

**Fungi, Algae and Protozoa**

Some of the first microorganisms to be observed by the aid of magnifying lenses were eukaryotic one-celled organisms.  Such organisms are common in pond water and soil.  Today’s student of microbiology can find the same fascination enjoyed by Leeuwenhoek in examining environmental samples.

Observe the samples of fungi (bread and fruit mold) by using the stereoscope on the demonstration tables.  Look for hyphae and reproductive structures.  Compare the fresh examples to the photographs and sketches available.  Sketch what you see.

Read some of the excerpts from Leeuwenhoek’s reports which are provided to you in the lab or on reserve in the library. Compare his descriptions with your own observations of pond water or known protist samples.

Make a **wet mount** using a drop from pond water samples or the protozoan species provided.  Take care not to crush the organisms with the cover slip.  A slanted cover slip mounting may be of advantage: Apply a cover slip so that one edge of it is supported by another cover slip.

You may find Euglena, Paramecium, Ameba, Vorticella, or Stentor as examples of protozoans.  Ulothrix, or Spirogyra may represent the algae.  Multicellular organisms may be present as well.  Daphnia, Cyclops, Hydra, Planaria, Nematodes, and various crustacean larvae are often seen.  Look at the photographs posted in the room for comparison and identification of the organisms in your sample.

Sketch the organisms you see:  (NOTE: Some of these organisms are large enough to be clearly seen with lower power.  If you find a good example, let the instructor place your slide on the darkfield microscope for demonstration.)

*Saccharomyces cerevisiae* (baker’s yeast) will demonstrate single-celled eucaryotes of kingdom Fungi.  Prepare a wet mount from the yeast culture.

1. Place one drop of broth in the center of a clean slide.  
2. GENTLY lower a cover slip into the drop, resting one side on the glass slide at first.  (If You drop the cover slip rapidly over the slide, air bubbles will develop.)  
3. Observe through all objectives, sketching from high-dry and oil immersion.

                The yeast cells will appear as tiny ovals, sometimes attached to budding clusters, often  
                tinted with a slightly greenish hue by refraction.  If you see large round structures with  
                wide black borders, they are probably air bubbles; ignore them.

 