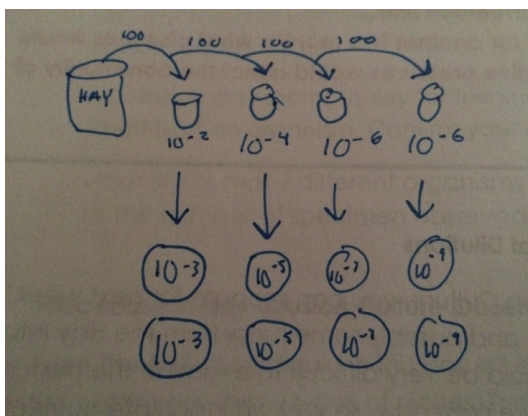


28 January 2015 – JB

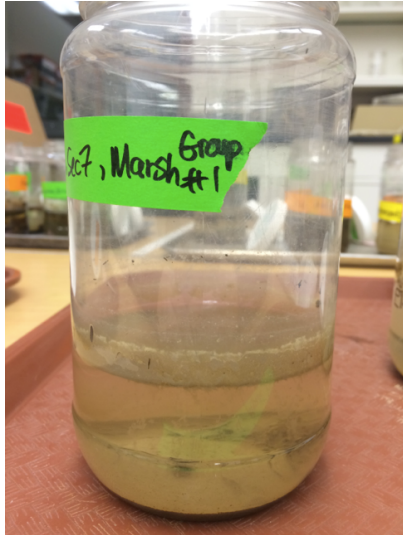
Identifying Algae and Protists

The experiment was conducted with the intention of practicing using a dichotomous key, understanding the characteristics of algae and protists, and examining algae and protists from the previously examined transect. A Eukaryote is a multicellular or unicellular organism that has membrane-bound organelles and nuclei. Two types of eukaryotes observed in this experiment were algae, unicellular eukaryotes that perform photosynthesis, and protists, unicellular eukaryotes that consume nutrients. To identify these organisms, one uses a dichotomous key. The key can identify groups of organisms by asking questions about motility, size, color, and shape.

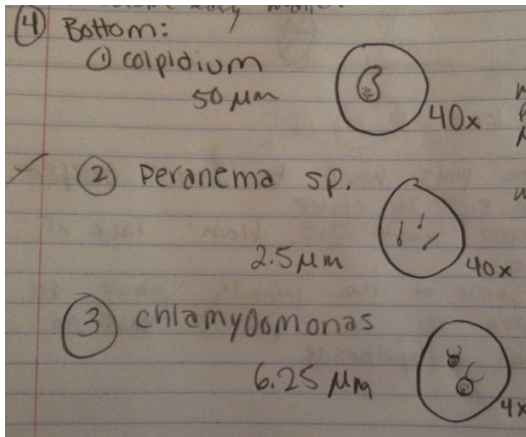
In this experiment we completed three procedures. First, we made a wet mount of known organisms to gain practice on recognizing organisms using a dichotomous key. After that, we made wet mounts of solution from the top and bottom of our hay infusions. From the top we drew from the moldy matter gathered at the surface. For the bottom sample we collected some of the dirt that rested on the bottom of the jar. The organisms at the top and bottom may have differed because some who were near the plant matter may be utilizing food sources where as others may rest where more sunlight comes in for photosynthesis processes. We examined and identified the unicellular eukaryotic organisms using a dichotomous key. Lastly, we prepared serial dilutions. To do so we used four test tubes, labeled 10^{-2} , 10^{-4} , 10^{-6} , and 10^{-8} . We also used four nutrient agar plates and four nutrient agar plus tetracycline plates. Each group had a plate labeled 10^{-3} , 10^{-5} , 10^{-7} , and 10^{-9} . We then pipetted 100uL from the hay infusion to the 10^{-2} test tube and swirled to mix. Then we transferred 100 uL from tests tube 10^{-2} , into the 10^{-4} tube. We repeated the process in order. We then transferred 100 uL of 10^{-2} tube onto plates labeled 10^{-3} . We continued the process until all plates had been used. Then we left the plates on a rack to incubate for a week.



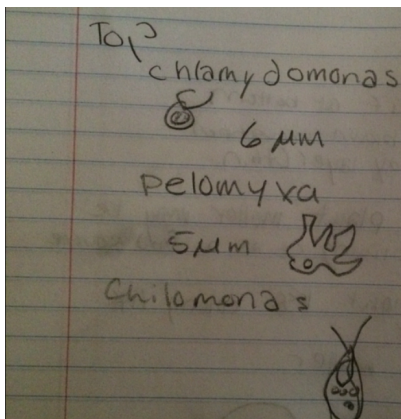
This is a diagram of the dilution process.



The Hay infusion had a rotten smell. It appeared that the dirt has sunk to the bottom and that a mold had accumulated on top of the liquid.



The bottom had three identified protists. The first was motile and not photosynthetic. The other two were motile and photosynthetic.



The top had three identified protists. The first and last were motile and photosynthetic. The second one was motile and not photosynthetic.

If the Hay infusion culture grew for two more months the protists would likely be larger in size and more mature. Also much of the plant matter would be reduced because of non-photosynthetic protists that would consume it. One of the species found, the *Chlamydomonas*, meets the criteria for life because it contains cells, it photosynthesizes for energy, it responds to environmental information and has genes, it replicates, and it has the ability to evolve through evolution. The protists and algae that accumulated seemed to correlate well with the location in which they were found.