WORKING WITH PROTOZOA: TIPS AND TECHNIQUES

1. Don't expect a fresh sample of pond water to be teeming with protozoa. This is no more likely than dipping a fish net into a lake and pulling out a net full of fish. Instead, culture your pond water sample for a few days in a nutrient-rich solution before making observations.

2. Slowing chemicals can kill some protozoans (i.e., *Blepharisma*). It is possible to slow them down without killing them by first diluting the slowing chemical with the sample. Try one drop chemical with two drops of sample in a separate well slide, then take one drop of this diluted solution and add it to one drop of sample on a separate slide.

3. As a slide dries up, it can be rejuvenated by adding a drop of sample to one edge of the cover slip while the slide is still on the stage.

4. Do not use tap water to increase water levels in samples. The chlorine will kill most protozoa. Use spring or distilled water instead.

5. When washing slides or cover slips, do not use soap. Trace amounts will be left on the glass and will kill the protozoans.

6. Three days before your samples arrive, make up some nutrient-rich culture solutions (hay infusion, etc.) to prolong the life of the organisms. When the samples arrive, inoculate the nutrient-rich solution immediately. This will give you important back-up samples in the event of contamination of your primary sources.

7. Droppers and pipets should not be interchanged between samples. Instead, use color-coding or physically connect the dropper to the sample with string. The dropper used with the slowing chemical should never be placed in any sample containers.

8. Old samples may appear void of life, however many of the protozoa may have encysted. To investigate excystment, do not allow the sample to dry out, instead, cap it to prevent evaporation and store for future use. Many protozoa will excyst by simply adding distilled water to the sample. Others, like *Didinium*, will require water which contains a thick culture of *Paramecium* and bacteria. It may take several hours for a protozoan to excyst. Some protozoans, like *Paramecia*, do not form cysts.

9. The nucleus of many protozoa becomes visible as the sample dries up and the protozoan expires. This effect can be accelerated by using slowing chemicals.

10. Always be ready to divert your attention from the observation at hand to anything new or bizarre that may appear in your field of view. Certain phenomena, like *Stentor* conjugating are rarely seen and should be observed and/or documented if the occasion arises. The more time one spends observing these fascinating life forms, the more one will see!