

Laboratory 17

Bacteria and Protists

Student Tip Sheet

This section of the manual begins a study of classification, beginning with the bacteria and protists. There is a tremendous amount of information presented from these two groups for one laboratory chapter, not to mention that there are many techniques for observation and multiple layers of identification terminology. The question arises as to how much detail of technique, terminology, identification, and description you will be required to remember. Each organism has its critical position in the grand scheme of our world as you have discovered in past chapters. Your teacher, however, will give you definite instructions as to the specific organisms and terminology for which you are responsible. Make careful notes and be prepared for outside study. Looking at these examples of the classification groups in lab is one thing but remembering their names and characteristics is certainly another. This is a chance to use some of those studying and memorizing skills that you have been saving! For example, individual flash cards with the name of the organism on one side and the classification or specific characteristics on the other will give you a handy tool that will allow you to study and review over and over until you have each fact firmly in mind. As you study, verbalize the terms aloud. These scientific terms can look long and complex but most are spelled as they sound and many of the syllables each have meaning. Make yourself sound out each one and soon even the longest names will not seem difficult. Another possibility is to make a chart in the form of a tree with various related organisms on separate branches. Fill in the leaves with specific characteristics. This is an opportunity for the creative juices to flow.

The following tips will highlight several of the sections in this chapter:

Introduction

All biology students need to know a classification scheme. However, know that there are several accepted layers of terminology, especially in the lowest life-forms and in the advanced divisions. Scientists are usually themselves grouped into “splitters” or “lumpers” and then most of us are somewhere in between. Taxonomists now use electrophoresis or other separation technologies to discern various grouping strategies. These criteria are constantly changing as the technology advances.

Agar Plates

After you have inoculated your petri plates, place them for incubation at the desired temperature UPSIDE DOWN. Otherwise, moisture will collect under the lid, and it will “rain” inside the plate. If this happens your colonies will run together, contaminate, or perhaps ruin your culture.

Cyanobacteria

The blue-green algae are very small, but do not try to use oil immersion with a wet mount. Oil immersion is difficult enough with prepared slides, but careful microscopists can master this technique. However, to use oil with a wet mount makes a slimy mess and should be avoided. Your teacher will give you specific instructions as to how to use oil immersion. This special oil traps escaping light and allows for increased magnification. Follow your teacher’s instructions to preserve your slides and the lens of your microscope. Make certain that you clean up carefully, otherwise oil will build up on the lens and prevent clear viewing.