Ex. 14-1: THE PROTISTS

Table 14.5 – Comparison of Protists Studied in Exercise 14.1

**Note:** After each Lab Study (A, B, C, D, E, F, G) – Complete the table below

<table>
<thead>
<tr>
<th>Protist Example</th>
<th>Characteristics</th>
<th>Ecological Role</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Trypanosoma levisi</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paramecia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dinoflagellates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diatoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown Algae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foraminiferans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiolarians</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lab Study A: Euglenozoans – Example: *Trypanosoma levisi*

**Results**

1. In the circle below, draw several representative examples of *Trypanosoma levisi* and red blood cells showing their relative sizes.

![Trypanosoma levisi and red blood cells](image)

Lab Study B: Morphology of Individual Cells

*Paramecium caudatum*

**Results**

1. In the rectangle below, use your textbook (Figure 28.11) to draw an example of a paramecium with all of the organelles and structures.
Dinoflagellates

Results
1. In the circle below, draw several examples of the shapes of Dinoflagellates from the prepared slide.

Lab Study C: Stramenopiles – Examples: Diatoms and Brown Algae

Diatoms

Results
1. In the circle below, draw several examples of the shapes Diatoms from the prepared slide.

Brown Algae (Phaeophyta)

Results
1. In the circle above, draw an example of Brown Algae from the demonstration area.

2. What are some of the major everyday things that use algin?
Lab Study D: Rhizarians – Examples: Foraminiferans and Radiolarians

Foraminiferans

Results
1. In the circle below, draw several examples of the shapes Forams from the prepared slide.

Radiolarians

Results
1. In the circle above, draw an example of Radiolarian skeletons from the prepared slide.

Lab Study E: Amoebozoans - Examples: Amoeba and Slime Molds

Amoeba

Results
1. In the circle below, draw an example of an Amoeba from the wet-mount slide you made.

Slime Molds (Mycetozoa)

Results
1. In the circle above, draw an example of a Slime Mold from the agar plate upon which it is grown. Do you observe the “fruiting bodies” or stalks? If so, include a drawing of this structure.
Lab Study F: Red Algae (Rhodophyta)

Results

1. From the demonstration area, observe an example of Red Algae and list the names and distinguishing characteristics. Use your textbook (Figure 28.20) to assist you.

Lab Study G: Green Algae – (Chlorophyta and Charophyta) – The Protist to Plant Connection

Procedure

1. Observe a prepared slide of the filamentous alga called *Spirogyra*. Draw a picture of what you see in the circle below.

   ![Spirogyra](image)

   ![Ulva](image)

2. From the demonstration area, observe an example of *Ulva* (sea lettuce) and draw a picture of what you see in the circle above. (You should also examine the Color Plate #27 in the back of the lab manual.)

   a. Describe the general appearance and body form of *Ulva*.

   b. Are there any structures present that would serve to attach *Ulva* to its substrate (e.g. a rock or a pier). If so, describe them.
Results

1. In the table below list the names and distinguishing characteristics of *Spirogyra, Ulva* and *Chara*. Refer to Figure 14.10 and Color Plates #27 and #28 in your lab manual.

<table>
<thead>
<tr>
<th></th>
<th><strong>Body Form</strong></th>
<th><strong>Characteristics</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(single-celled, filamentous, leaf-like, colonial)</td>
<td>(pigments, special structures)</td>
</tr>
<tr>
<td><em>Spirogyra</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Ulva</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Chara</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

Refer to the narrative in the lab manual and Chapter 14 in the text to answer the following questions.

1. Describe the mechanism for feeding in amoeboid, flagellated and ciliated protistans.

2. How do you think amoeboid organisms with *skeletons*, such as radiolarians, move food to their cell bodies?

3. Compare the appearance and rate of locomotion in amoeboid, flagellated and ciliated protistans.
4. Describe the general mechanism for defense in the protists studied in this exercise.

5. Compare dinoflagellates to diatoms. What is the important ecological role shared by these two groups?

6. What is one characteristic that you could observe under the compound light microscope to distinguish diatoms from dinoflagellates?

7. Slime molds were once placed in Kingdom Fungi. What characteristics do these organisms have that suggest these organisms are belong in Kingdom Protista?

8. What important ecological role is shared by the macroscopic algae (e.g. green, red and brown)?