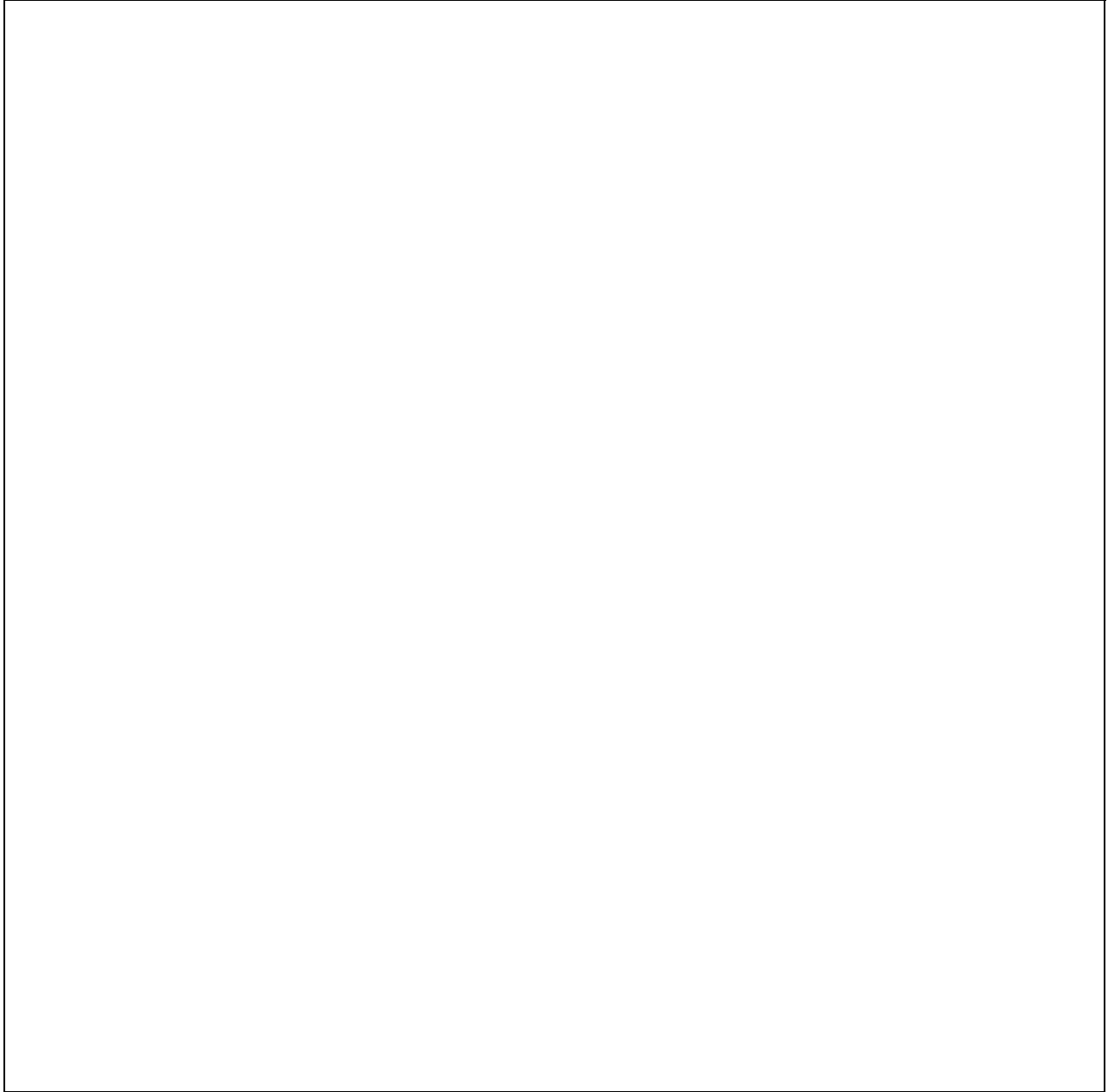


THE PROTISTS

ORIGIN OF EUKARYOTIC CELLS

A large, empty rectangular box with a thin black border, occupying the central portion of the page. It is intended for students to write their answers or show their work for the activity.

PROTIST SYSTEMATICS

OLD	NEW

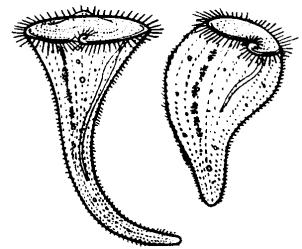
THE PROTIST HUNT

The purpose of this activity is to make several wet mount slides of different protist cultures and to location, observe and identify the protists using the dichotomous keys.

MATERIALS:

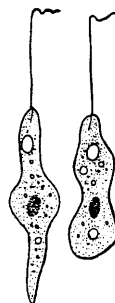
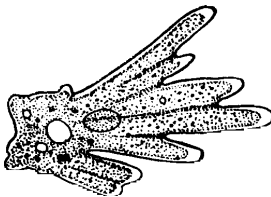
Compound microscope
Microscope slides
Coverslips
Detain
Protist Keys

Protist cultures of:
Mixed Amoebas
Mixed Ciliates
Mixed Flagellates

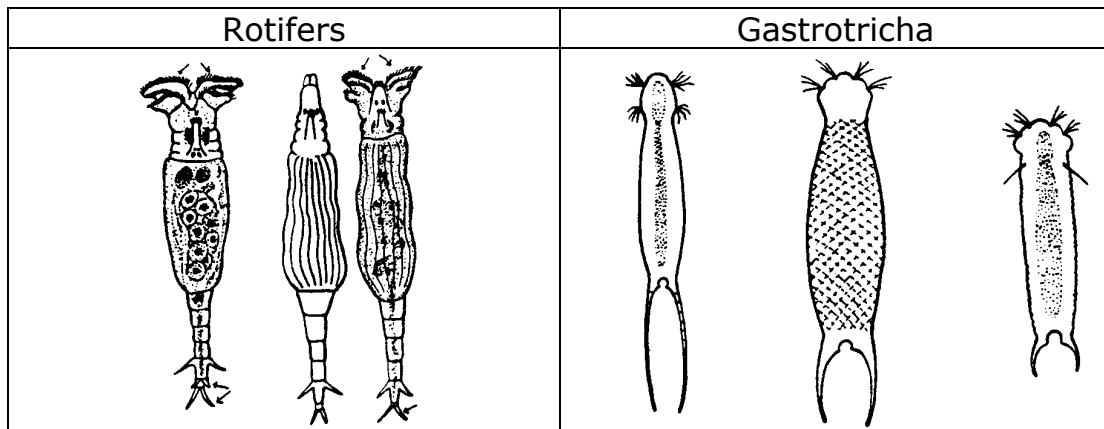


PROCEDURE:

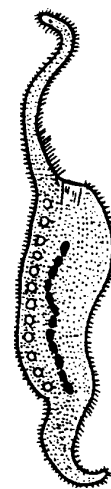
1. Place 3 drops of Detain on a clean microscope slide. Detain is a water-soluble, viscoelastic, non-ionic resin solution used to slow motile protists. Add 2 drops of protist culture to the Detain on the slide. There is no need to mix the drops. Place a cover slip over the drops.



- Use the low power of your microscope to scan the microscope slide for protists. Once you find a protist, examine it under both low and high power. Observe its method of movement and identify the visible structures. See if you can find the nucleus, chloroplasts (if present), food vacuoles (if present), contractile vacuoles, and method of locomotion (cilia, flagella, or pseudopodia).
- CAUTION:** Watch out for rotifers and gastrotricha (microscopic worm-like creatures). These organisms are not protists, but are often found in protist cultures. Use the drawings below to help you identify rotifers and the gastrotricha.



- Draw the protist you are studying in the observation section of this lab. Label the structures you can identify. Determine the size (length or diameter) of the protist. Use the key and diagrams to identify the
- Repeat steps 2 – 4 until you cannot find any other protists on this slide.
- Wash and dry your slide and coverslip.
- Repeat steps 1 – 6 using the same protist culture.
- Repeat steps 1 – 7 using the other protist cultures.
- Of all the protists you observed, which was the most unusual? Explain your choice.



OBSERVATIONS

PROTIST #1	PROTIST #2
Drawing	Drawing
Name	Name
Heterotroph or Autotroph	Heterotroph or Autotroph
Size	Size
Method of Movement	Method of Movement

Protist #3	Protist #4
Drawing	Drawing
Name	Name
Heterotroph or Autotroph	Heterotroph or Autotroph
Size	Size
Method of Movement	Method of Movement

PROTIST #5	PROTIST #6
Drawing	Drawing
Name	Name
Heterotroph or Autotroph	Heterotroph or Autotroph
Size	Size
Method of Movement	Method of Movement

PROTIST #7	PROTIST #8
Drawing	Drawing
Name	Name
Heterotroph or Autotroph	Heterotroph or Autotroph
Size	Size
Method of Movement	Method of Movement

QUESTIONS:

1. Complete the following chart providing the general characteristics of Kingdom Protista.

CHARACTERISTIC	DESCRIPTION / EXPLANATION
Prokaryotic or Eukaryotic	
Habitat	
Metabolism & Nutrition Types	
Motility	
Life Cycles	

2. How is the colonial arrangement of cells different from the multicelled arrangement?

COLONIAL ARRANGEMENT	MULTICELLED ARRANGEMENT

3. How are plasmodial slime molds different from cellular slime molds?

PLASMODIAL SLIME MOLDS	CELLULAR SLIME MOLDS

4. How are the seaweeds adapted for life in the ocean with pounding waves and strong currents?

5. How are seaweeds important to man?

6. Match the definition or description with the correct term.

- | | |
|---|------------------|
| _____ multicelled haploid stage | A. Anisogamy |
| _____ Multicelled diploid stage | B. Gametophyte |
| _____ Produces gametes | C. Heteromorphic |
| _____ Produces spores | D. Isogamy |
| _____ Sporophyte and gametophyte structurally different | E. Isomorphic |
| _____ Sporophyte and gametophyte look alike | F. Oogamy |
| _____ Male and female gametes look alike | G. Sporophyte |
| _____ Male and female gametes are different size | |
| _____ Flagellated sperm and nonmotile egg | |

7. Why are biologists considering putting the green algae (Chlorophyta) back in the plant kingdom?
