

Examining Chloroplasts in Pond Weed

Objectives:

- to examine chloroplasts inside a plant cell.
- to observe the effects of salt water on the cell

Materials:

- live pond weed
- distilled water (Collect the condensation off a clean, ice-water filled glass)
- Salt water (1/4 cup water and 1/4 teaspoon salt.)
- slides and covers
- dropper

Part I

1. Take the pond weed plant and break off a leaf. Place the leaf on a dry, clean slide, and add a drop of distilled water. Cover with a cover-slip.
2. Now examine the specimen with your microscope under low-power (100X-150X). If your microscope has a diaphragm, keep it on a low (smaller) setting.
3. Find a good area, and rotate to high-power (400X). You should see a pattern of rectangular cells. Look at the different organelles inside the cell. Occasionally you will see one move across the cell.
4. Now adjust the diaphragm to the highest setting. This allows the most light in possible. After a minute or so, you should see green globs rotating around the outer edge of the cell. These are called chloroplasts; they gather light for the cell. When you expose them to light, they become excited and move rapidly.

Part II

1. Place two drops of the salt solution on the slide, just to the side of the cover-slip. Now place the paper towel next to the cover slip on the other side of the slip. If this is done correctly, the paper towel will absorb the fresh water and draw the salt water through the plant cells. (Stain can be applied in this manner also. This is called "[Pulling a Stain](#)".)
2. Now again examine the cells under the microscope. Notice a change? Look at the location of the chloroplasts. They should have retracted toward the center.

Questions for Thought:

1. Why did the chloroplasts move around in the cell?
 2. Why did the chloroplasts move toward the center of the cell after you added salt water?
 3. What do you think will eventually happen to the cells exposed to salt water? Why?
 4. Words to look up: Chloroplast, Organelle
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