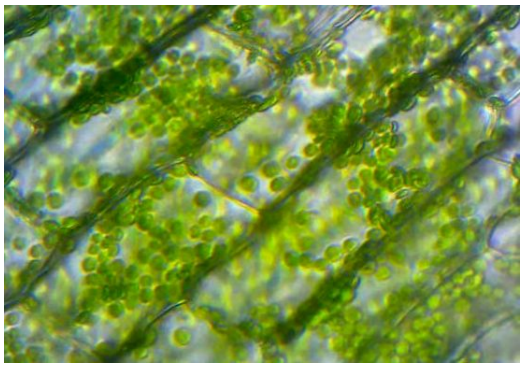
Lab Notebook

19th January 2016 - Day #2

Project : Observation of chloroplast movements according to different intensity of light.

To deal with our project, we bought *Egeria densa* - aquatic plants. They produce photosynthesis with their chloroplasts. We would like to understand better the relationship with the intensity of light and the movement of chloroplasts inside of the cell.



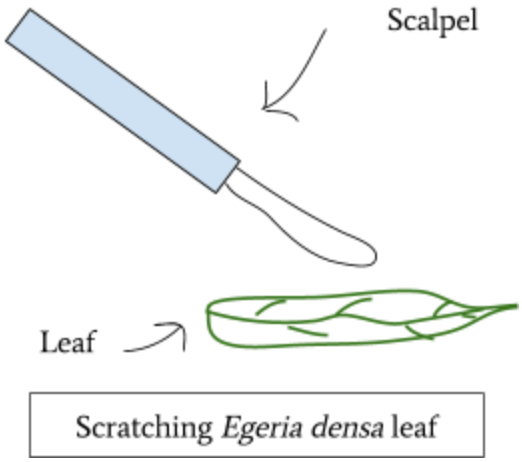
Chloroplasts
https://www.youtube.com/watch?v=jYg8-ZjGe9g

Manipulations:

- **With leafs** :

We buy two *Egeria densa* bouquets - each bouquet contains four stems, about 15 centimeters height.
We put these bouquets in a box of water, to provide them enough light and water to let them grow.
To observe *Egeria densa* chloroplasts inside of leaves, we use a scalpel to scrape them and try to have just one layer of cells. The idea is to have the more precise image of chloroplasts, so not be bother by others cells below (multiple layers of cells).

Egeria densa stem
https://commons.wikimedia.org/wiki/File:Egeria_densa_iceland.JPG



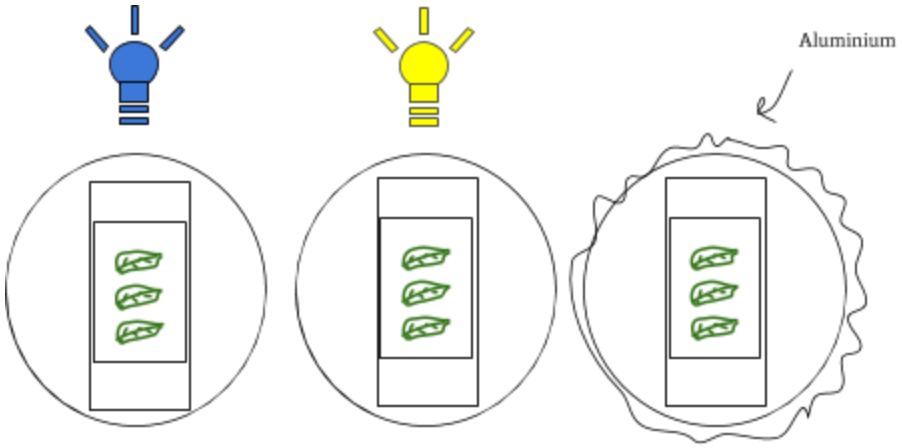
Scratching *Egeria densa* leaf

This operation is not that easy, the leafs are very dense and difficult to separate.
After having obtained a single layer of cells, we are putting the leaf on a slide, a drop of water and a cover slide.

Pre-tests :

We would like to test different conditions of conversation of leafs (dark, blue light and white light) and after observed them on the microscope, to see the different positions of chloroplasts.

We prepared three slides, with three scratched leafs of each. We put each slide on a petri dish empty.
We conserved one petri dish in a closet with only a white light (Arduino LED), another in a closet with only blue light (Arduino LED), and the last one packed with aluminium, to have complete dark around the slide.



Pre-experiments

- **With macroscope**

We learn how to use the microscope ZeissAxioPlan2-Imaging. It allows us to observe chloroplasts with fluorescence filter, and observe their movement.
To our first utilisation of it, we use the slide of leaves which comes from the white LED petri dish .
The microscope has three objectives x10, x,25 and x63. We learn how to make observations with a simple filter, with fluorescence. Also, with color combined option, we can this kind of image, which could help us to better observe chloroplast movements.