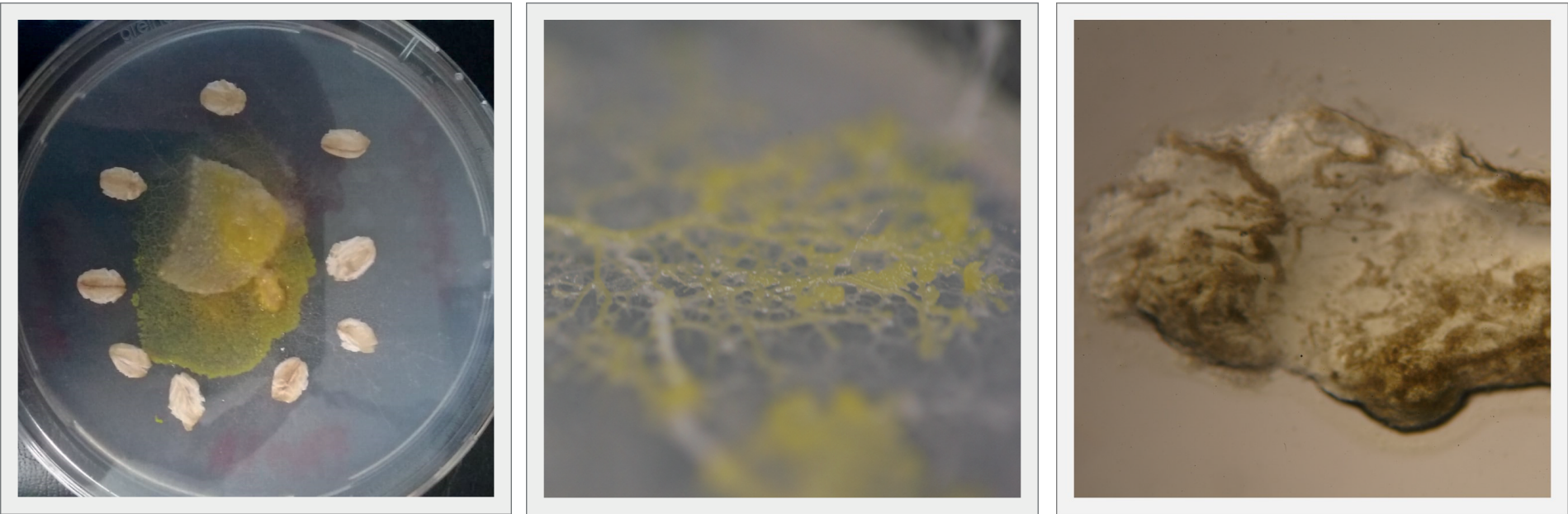


# Physarum Polycephalum



Trought the experiments that I realized I kept the samples in a temperature of around 18°C. From left to right can be seen the sample in a petri dish and leaflets / oatmeal. The second image shows it characteristic shape when it moves in search for food. The third picture shows the specimen under the microscope.

## SPECIMEN INFORMATION

The protist is easily see be the human eye. In it’s natural environment it feeds from fungal spores, bacterias and other microbes. The vegetative phase of this specimen is the plasmodium, in this stage it surrounds its food and secretes enzymes to digest it. When the environmental conditions are not adecuate, it desiccates and form a sclerotium, that is a multinucleated tissue that serves as a dormant stage for the physarum polycephalum to survive until the conditions are ideal again. In it’s reproductive phase, the speci-men creates spores that are color black, they can be easily spread by the wind, and can sleep many years until the enviromental conditions are ideal again.

There are a lot of studies around how it moves, because it doesn’t have a nervous sytem. It’s streaming behaviour is subject of study by many cientifics and biologist. It have been prove it’s efficiency by searching food and creating the shortest and efficient routs to reach food. Two famous experiments have been done in search of the logic behind it’s movement “Intelligence: Maze-solving by an amoeboid organism”, was a experiment where to oatmeal where situated in a maze where the specimen growths and be situating two food ends, the specimen created the shortest route to connect the food spots. Another experiment was made in 2010 where the Physarum Polycephalum recreated the main logic of the routes of train of Tokio and 26 surrounding towns. This specimen have proof also that have some kind of memory, by predicting some conditions. Some investigations made by Audrey Dussutour have shown that this specimen can learn to habituate it self in mediums that don’t fulfill it’s ideal conditions like for example; mediums that are too salty, dry, or have high concentrations of cafeine, in order to reach sources of food. It have been proof that it can trans-mit this habituated response to other entities that haven’t been expose to this kind of environments.

## SPECIMEN ADOPTION - GENERAL CONCLUSIONS

For four months I adopted this specimen. During this time I tested different conditions in terms of temperature, light, and mediums in order to understand the optimal conditions of growth for this specimen. After learning that, I followeg the experiments made by Audrey Dussutour, in order to learn and test how this specimen habituates it self to mediums with salinity concentrations. Also I get familiar with the use of the instruments inside the laboratory and learn about the rules inside it.

More information of this specimen can be found in: [https://en.wikipedia.org/wiki/Physarum\\_polycephalum](https://en.wikipedia.org/wiki/Physarum_polycephalum)

All the information that I developed around the project can be found in: [www.uni-weimar.de/kunst-und-gestaltung/wiki/Paola\\_S.\\_Calder%C3%B3n/Project](http://www.uni-weimar.de/kunst-und-gestaltung/wiki/Paola_S._Calder%C3%B3n/Project)

- MEDIUM 1
- 100 ml of water
  - 2gr of Agar
  - Leafets /Oatmeal
- MEDIUM 2
- Diced boiled potatoes. 42g.
  - Leaflets/oatmeal 42 g.
  - 800 ml of water
  - 8 g of Agar

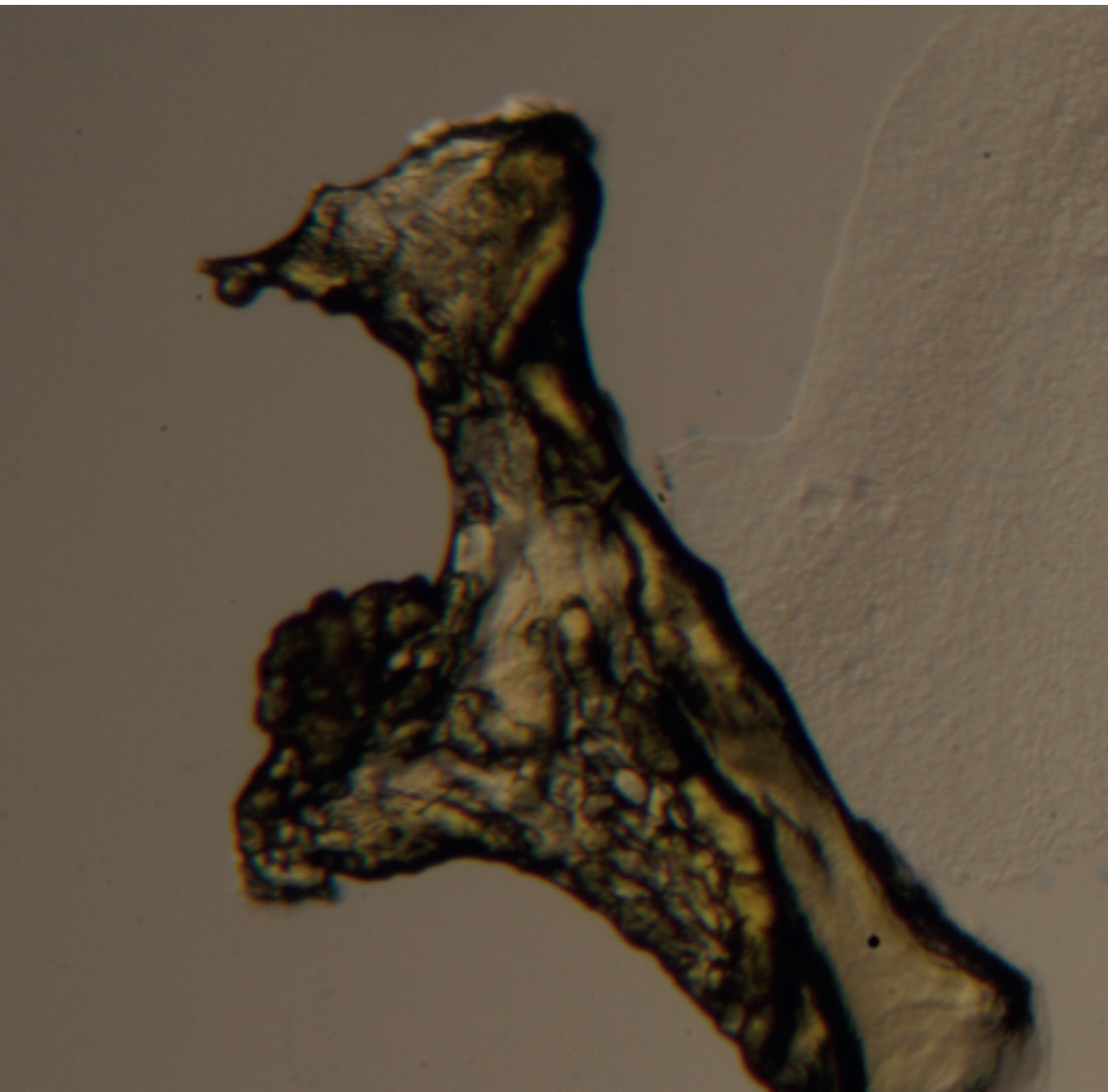
## NATURAL ENVIRONMENT

It is found in shady, cool, moist areas, like desaying leaves and logs, is sensitive to light, what trigger it spores reproducction.

SCIENTIFIC CLASSIFICATION	
Phylum:	Mycetozoa
Class:	Myxogastria
Order:	Physarales
Family:	Physaraceae
Genus:	Physarum
Species:	P. polycephalum
Binomial name:	Physarum Polycephalum

## DESCRIPTION

Is a protist know as the “many -heded slime”. It have a characteristic strong yellow color. It use cytoplasmic streaming to search food, the logic behind this specimen’s movement is still a sub-ject of study for biologist and cientifics.



Observation under the microscope of a living sample (20.12.2018).