

The third kingdom

***EUGLENA CLOCK***

***Nothing is motionless in the eyes of the rhythm analyst. He hears wind, rain, thunderstorm. In observing a pebble a wall or a tree he perceives the slowness of movements of these objects. Their movement is slow only in proportion to our time, our bodies, our rhythms.***

**EUGLENA CLOCK**



***Kurt Meyer***  
***Rhythms, Streets, Cities***



*Habitats*



The word **habitat** has been in use since about 1755 and derives from the Latin habit re, to inhabit, from hab re, to have or to hold. Habitat can be defined as the natural environment of an organism, the type of place in which it is natural for it to live and grow.

An **hourglass** is a simple time-piece, known since the 14th century. Depictions of hourglasses in art survive in large numbers from antiquity to the present day, as a symbol for the passage of time.





*Euglena*

<https://en.wikipedia.org/wiki/Euglena>

„***Euglena*** is a genus of single cell flagellate eukaryotics. Species of *Euglena* are found in freshwater and salt water. They are often abundant in quiet inland waters where they may bloom in numbers sufficient to color the surface of ponds and ditches green. Most species of *Euglena* have photosynthesizing chloroplasts within the body of the cell, which enable them to feed by autotrophy, like plants. The species *Euglena gracilis* has been used extensively in the laboratory as a model organism. In nature it is most commonly found in water bodies such as streams, ponds, and lakes.“



„Since *Euglena* have features of both animals and plants, early taxonomists, working within the Linnaean system of biological classification, found them difficult to classify. It was the question of where to put such „unclassifiable“ creatures that prompted Ernst Haeckel to add **a third living kingdom, the Kingdom Protista**.“



## *Euglena Clock*

Euglena Time is an experimental project around the 4 main correlations that define the concept of rhythm:

- 1 mechanical and organic - merging technological and natural
- 2 linear and circular time - understanding Euglenas circular rhythm of time
- 3 continous and discontinous - studying the unique rhythms of each Euglena culture
- 4 discovery and creation - observing the rhythms of Euglena and creating a habitat for them

Being one of the oldest technological, linear timepieces my goal is to create an hourglass which forms a habitat for Euglenas natural, circular rhythms of time.

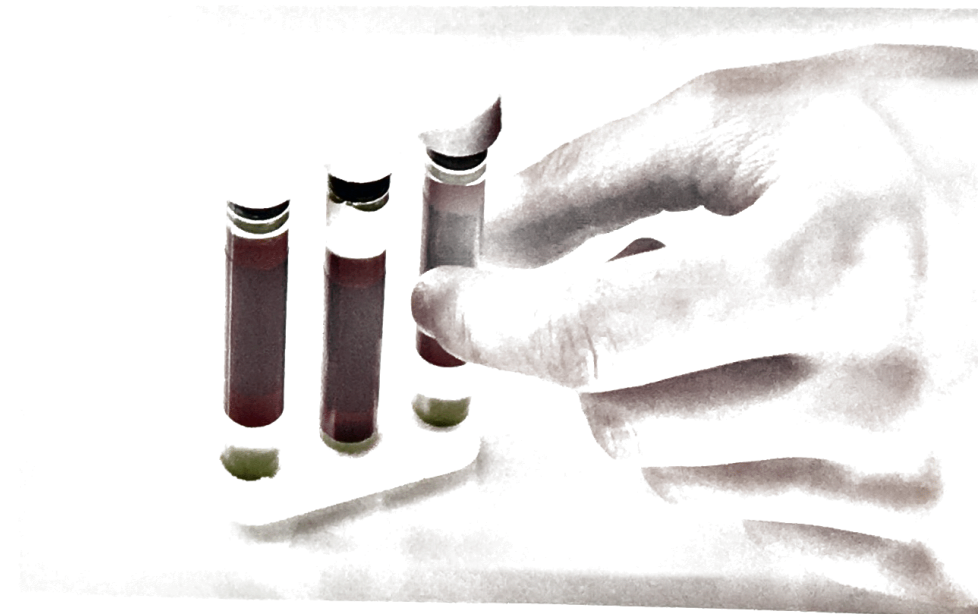


Euglena clock deals with the theory of different time systemhs. It is a homage to time as a relative measure and the organic, circular rythms of natural time.

Therefore it can't be „read“ in the traditional kind of way. It is more of a tool to experience time as a fluid matter and to be conscious about its flow.

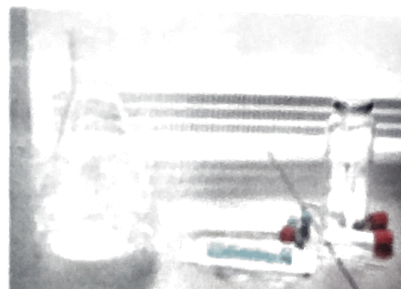
Similarly to ***the way, people estimated time by following the sun's path***, long before the invention of technological time measuring instruments, you can read euglena time by observing its different states of green and decide by experience when it is time to switch it over.

## *How to read Euglena Time*



# The experiments

Euglena is a micro organism that does photosynthesis and therefore is attracted by light. In my experiments I study this phototaxis (orientation by light). For doing so I try to influence their behavior in relation to different light situations.



## Goal

Euglena can't recognize red light, therefore I wrapped the tube in transparent red foil to see if they would concentrate on the transparent bottom where the light source is.

## Setup

Glass tube filled with water and Euglena, the tube is wrapped in semitransparent red foil. An LED light is placed on the bottom of the glass, which is not covered with foil.



## Outcome

After 12 hours there is a visible concentration on the bottom of the tube.

## Duration

12 hours



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## Goal and Setup

After Experiment 1 I wanted to find out to what degree gravity influenced the concentration on the bottom, therefore I made the same experiment upside down. Is the same effect occurring if only daylight is used instead of a LED?

## Duration

24 hours

## Outcome

The concentration on the top of the glass is clearly recognizable. A LED light is clearly not needed. I will therefore proceed with the use of daylight.



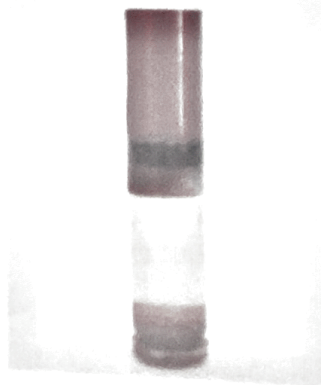
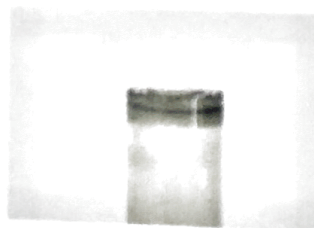
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## Goal

Create a concentration that's visible through the red foil.

## Duration

24 hours



**Nay, every race on earth of  
men, and beasts,  
And ocean-folk, and flocks,  
and painted birds,  
Rush to the raging fire: love  
sways them all.  
Fast flies meanwhile the  
irreparable hour,  
As point to point our  
charmed round we trace.**

***Rhoades***