

# Degree of Relative Priority of Taxes of

# *Paramecium Caudatum*

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## 1. Introduction

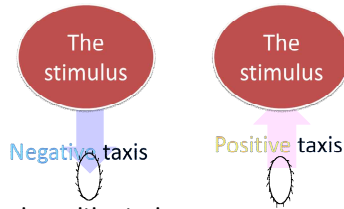
### *Paramecium*

- It belongs to the kingdom of Protista.
- It is a unicellular organism that can move, digest food and reproduce.



### Taxis

- Movement of an entire cell or organism in response to an external stimulus.



- There are two types of taxes .  
Movement towards the stimulus is positive taxis  
Movement away from the stimulus is negative taxis.

## 2. Purpose

To find the degree of relative priority of two taxes in paramecia.

*Paramecium* has different kinds of taxes .  
Some of these are chemotaxis , gravitaxis , thermotaxis , and electrotaxis.

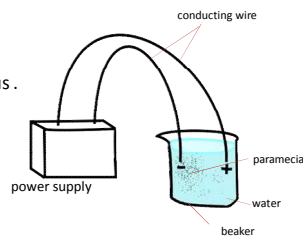
Gravitaxis and electrotaxis in *Paramecia caudata* are studied in this research.

## 3. Method

When the stimulus is electricity,  
*Paramecia* move away from the stimulus .

Electrotaxis is

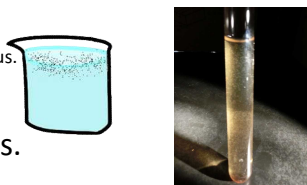
negative taxis.



When the stimulus is gravity,  
*Paramecia* move away from the stimulus.

Gravitaxis is

negative taxis.



We applied gravitaxis and electrotaxis stimuli at the same time using the same test tube.

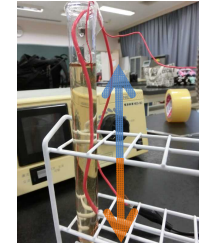


Upper part : gravitaxis  
Lower part : electrotaxis

If the *Paramecia* gather in the upper part of the test tube, gravitaxis response occurs.

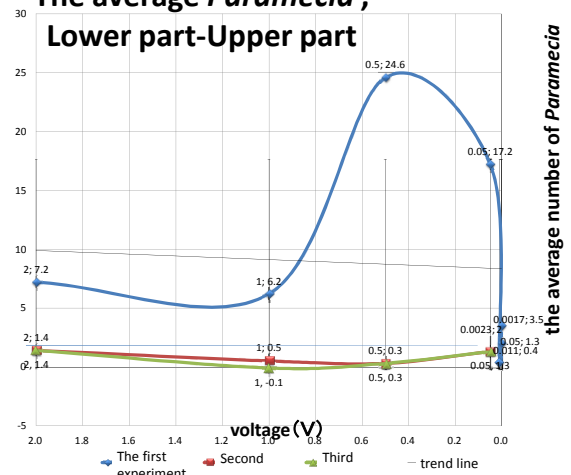
If the *Paramecia* gather in the lower part of the test tube, electrotaxis response occurs.

We found that the *Paramecia* gathered in the lower part of the test tube. Therefore, electrotaxis is more dominant than gravitaxis.

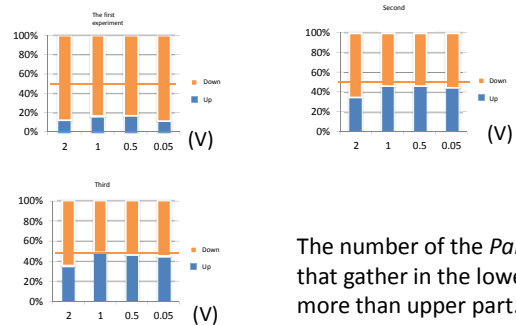


## 4. Results

The average *Paramecia* ,  
Lower part-Upper part



The percentage of the number of the *Paramecia*



## 4. References

- [www.toray.co.jp/tsf/rika/pdf/h17\\_06.pdf](http://www.toray.co.jp/tsf/rika/pdf/h17_06.pdf)
- [www.edu.pref.kagoshima.jp/curriculum/rika/kou/jikken/.../page06.htm](http://www.edu.pref.kagoshima.jp/curriculum/rika/kou/jikken/.../page06.htm)
- <http://www.docstoc.com/docs/81123991/Chemotaxis-in-Paramecium>

## 5. Future challenges

- To compare other taxes (for example thermotaxis and electrotaxis).
- To prove why there is gravitaxis in *Paramecia* by using pressure.