Major Wester September 12, 2019

Title: The effect of temperature on pill bug movement

Introduction

The purpose of this lab was to determine how temperature affects pill bug movement. We hypothesized that pill bugs like warmer temperatures and they will move towards them. Pill bugs live in the ground which is cooler than the air temperature, but they are more common in the summer when it is warm.

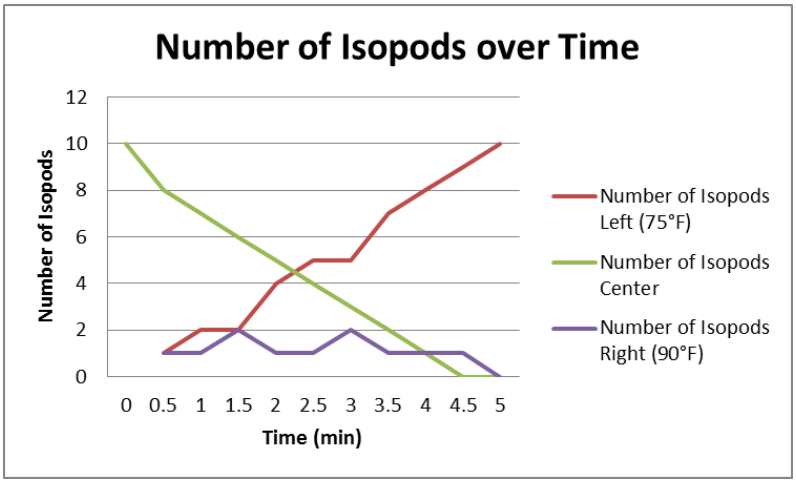
Experimental Design

In order to test our hypothesis, we conducted an experiment where the independent variable was the temperature and the dependent variable was where the pill bugs went. The pill bugs, moisture, light, and pH within each chamber were kept constant throughout all trials. Our control was the side of the chamber that we did not change the temperature for (room temperature).

To perform the experiment, we adjusted the chamber temperature with a hot plate. Next we put pill bugs into the choice chamber where one side was room temperature (75°F) and the other side was 90°F. Every 30 seconds for 5 minutes we recorded the location of all the pill bugs.

Data

Time (min)	Number of Isopods		
	Left (75°F)	Center	Right (90°F)
0		10	
0.5	1	8	1
1	2	7	1
1.5	2	6	2
2	4	5	1
2.5	5	4	1
3	5	3	2
3.5	7	2	1
4	8	1	1
4.5	9	0	1
5	10	0	0



Conclusion

The pill bugs avoided the environment that was warmer that room temperature. After 10 minutes, 9 pill bugs were located on the room temperature side of the choice chamber, while 1 pill bug was located in the middle. No pill bugs were located in the 90°F side. Pill bugs move towards areas that help them survive, so more pill bugs in the room temperature side of the choice chamber suggests they prefer that temperature. These results did not support our original hypothesis, but they might explain why pill bugs tend to be found in dark areas, away from the hot sun.