

# Reproducing Powell et Al. 2017

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```
#Reproducing code from #(Powell et al. 2017)
```

```
#COMPLETED: loaded in data and packages
```

```
rm(list=ls())
```

```
library(survival)
```

```
## Warning: package 'survival' was built under R version 3.6.2
```

```
library(tidyverse)
```

```
## -- Attaching packages ----- tidyverse 1.3.0 --
```

```
## v ggplot2 3.3.2      v purrr  0.3.3
## v tibble  3.0.3      v dplyr  0.8.3
## v tidyr   1.0.0      v stringr 1.4.0
## v readr   1.3.1      v forcats 0.5.0
```

```
## Warning: package 'ggplot2' was built under R version 3.6.2
```

```
## Warning: package 'tibble' was built under R version 3.6.2
```

```
## -- Conflicts ----- tidyverse_conflicts() --
```

```
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
knitr::opts_chunk$set(echo = TRUE)
```

```
#package 'survival' was built under R version 3.6.2 and was downloaded in the binary format, not the source version
```

```
Collection_data <- read_csv("~/Google Drive/AA Graduate /Data and Software Tools EBI06660/data/Cephalotoxins.csv")
```

```
## Parsed with column specification:
```

```
## cols(
##   colony = col_character(),
##   nest_no = col_double(),
##   workers = col_double(),
##   soldiers = col_double(),
##   ent_area_mm = col_double()
## )
```

```
Field_expt <- read_csv("~/Google Drive/AA Graduate /Data and Software Tools EBI06660/data/Cephalotes_rol
```

```
## Parsed with column specification:
## cols(
##   tree = col_character(),
##   entrance_size = col_character(),
##   nest_pop = col_character(),
##   week_death = col_character()
## )
```

```
Lab_expt <- read_csv("~/Google Drive/AA Graduate /Data and Software Tools EBI06660/data/Cephalotes_rohw
```

```
## Parsed with column specification:
## cols(
##   colony = col_character(),
##   treatment = col_character(),
##   position = col_double(),
##   entrance = col_character(),
##   treatment_phase = col_character(),
##   workers = col_character(),
##   soldiers = col_double(),
##   eggs = col_character(),
##   larvae = col_character(),
##   pupae = col_character()
## )
```

#data was readily available by the author in csv format. So far no metadata or code has been located for this paper.

#STILL WORKING ON IT: Next I will work with the data to generate summarizing graphics and work on the first boxplot which I seek to reproduce. Next I will familiarize myself with the survival package in order to generate the survivorship curve.

## PROGRESS REPORT OCT 25

##STUCK: need to understand difference between col character and col double: running the above data into R gets this in response (below), likely because Powell used solely R (not R Studio) to perform his analysis. Code has not yet been received, but contact was made. #Parsed with column specification: cols( colony = col\_character(), nest\_no = col\_double(), workers = col\_double(), soldiers = col\_double(), ent\_area\_mm = col\_double() ) Parsed with column specification: cols( tree = col\_character(), entrance\_size = col\_character(), nest\_pop = col\_character(), week\_death = col\_character() ) Parsed with column specification: cols( colony = col\_character(), treatment = col\_character(), position = col\_double(), entrance = col\_character(), treatment\_phase = col\_character(), workers = col\_character(), soldiers = col\_double(), eggs = col\_character(), larvae = col\_character(), pupae = col\_character() )

Powell, Scott, Matina Donaldson-Matasci, Augustus Woodrow-Tomizuka, and Anna Dornhaus. 2017. "Context-Dependent Defences in Turtle Ants: Resource Defensibility and Threat Level Induce Dynamic Shifts in Soldier Deployment." Journal Article. *Functional Ecology* 31 (12): 2287–98. <https://doi.org/10.1111/1365-2435.12926>.