

Daphnia Disease

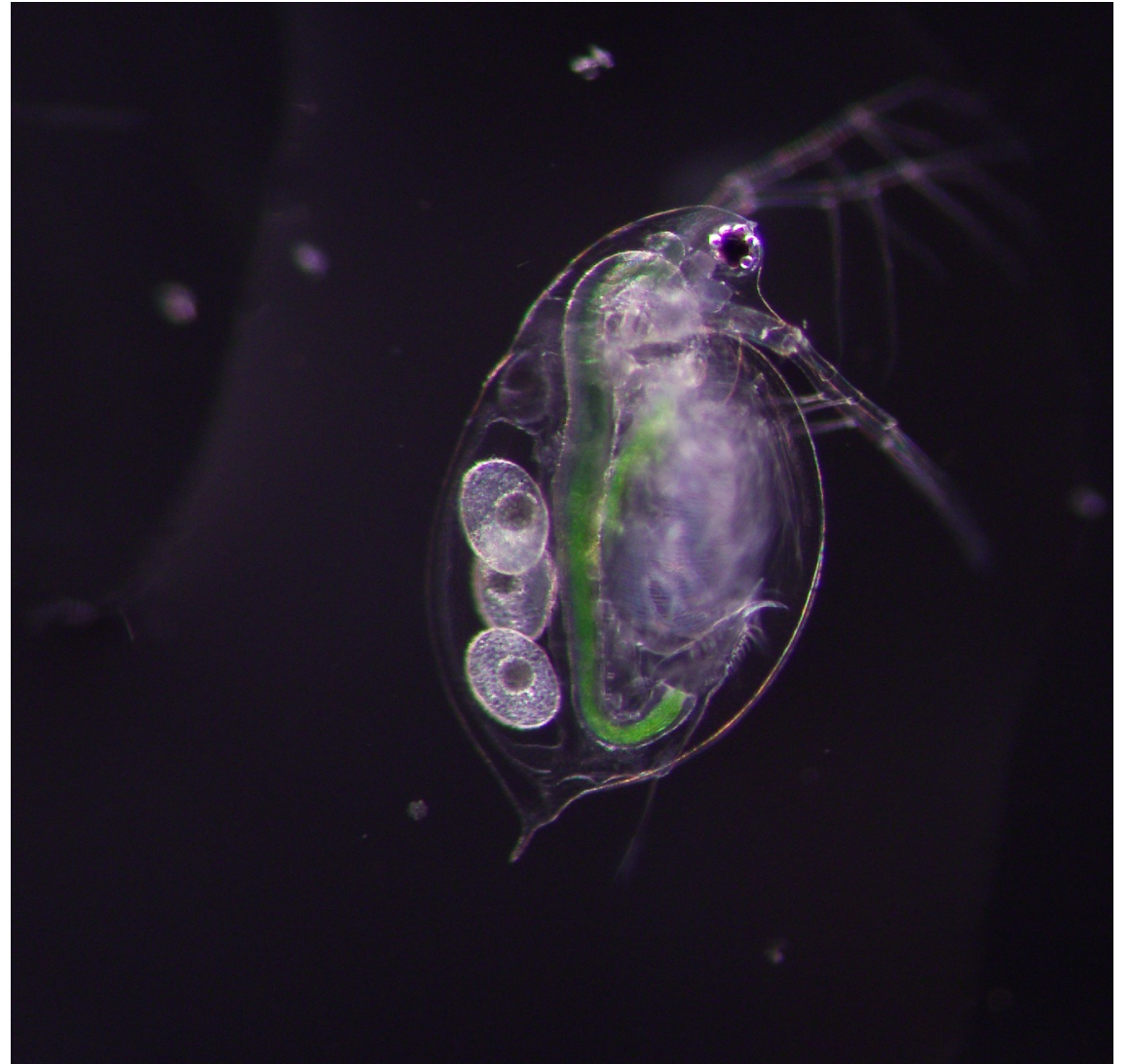
Characterizing the fitness effects of a previously understudied epibiont of *Daphnia ambigua*

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What is a daphnia?

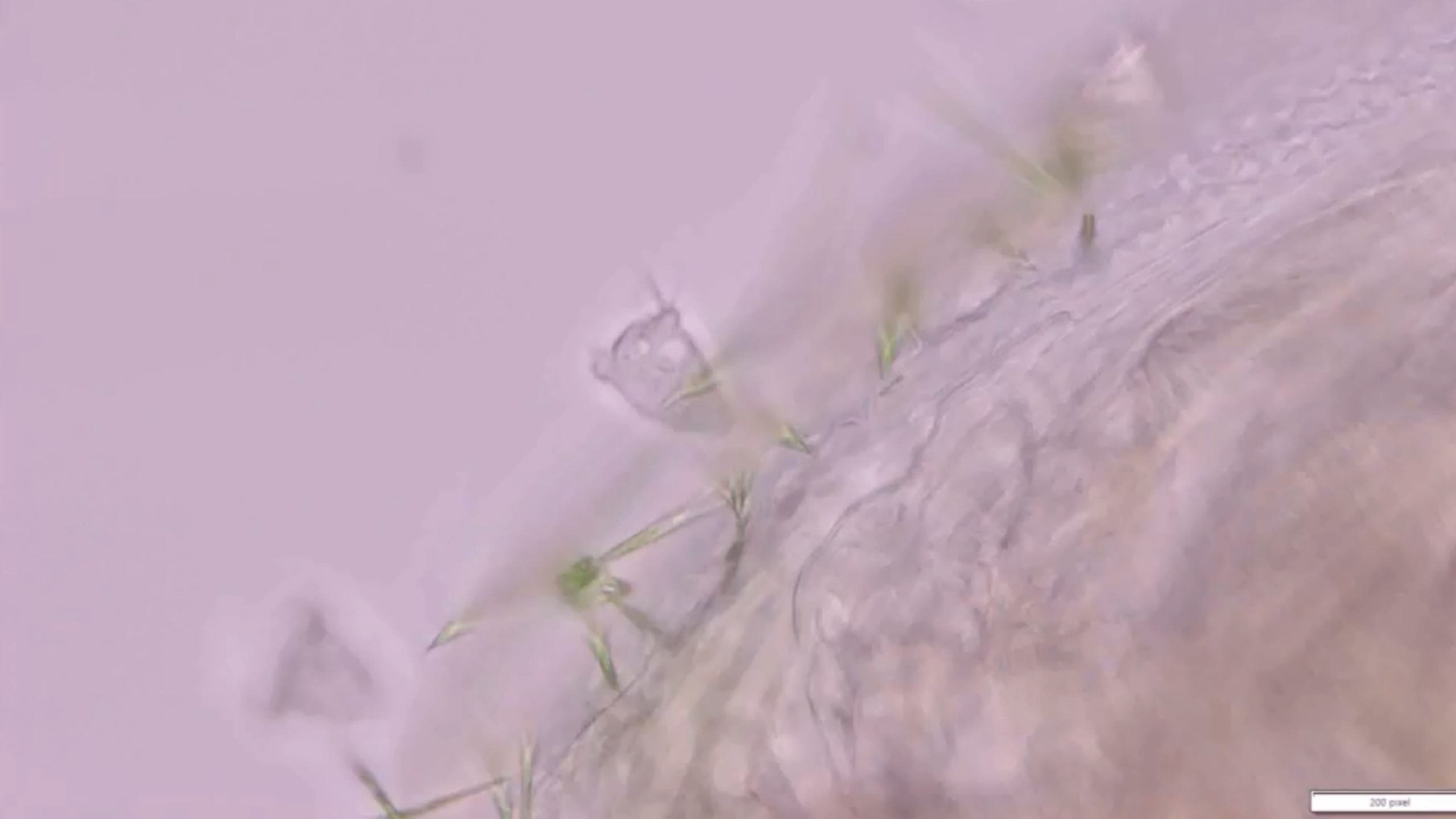
- Freshwater organisms
- Zooplankton! Daphnia eat algae
- Microscopic crustaceans...
D. ambigua are tiny- 1mm
- Their coolest feature:
transparency



What is an “epibiont”?

Symbiont that lives on the surface (exterior) of its host... in this case a *D. ambigua* individual





What are daphnia diseases?

From “obligate killers” to the less harmful



<http://www-personal.umich.edu/~duffymeg/InfectedDaphnia.html>



<https://www.biorxiv.org/content/10.1101/2023.04.21.537887v1.full>

What do we want to know?

- Prevalence
- Transmission
- Virulence



Prevalence

Sampling Sewall Pond

June 7

- Spirobacillus 1%
- Gurleya 3%
- Ordospora 0.2%

June 21

- Spirobacillus 52%
- Gurleya 21%
- Ordospora 3%

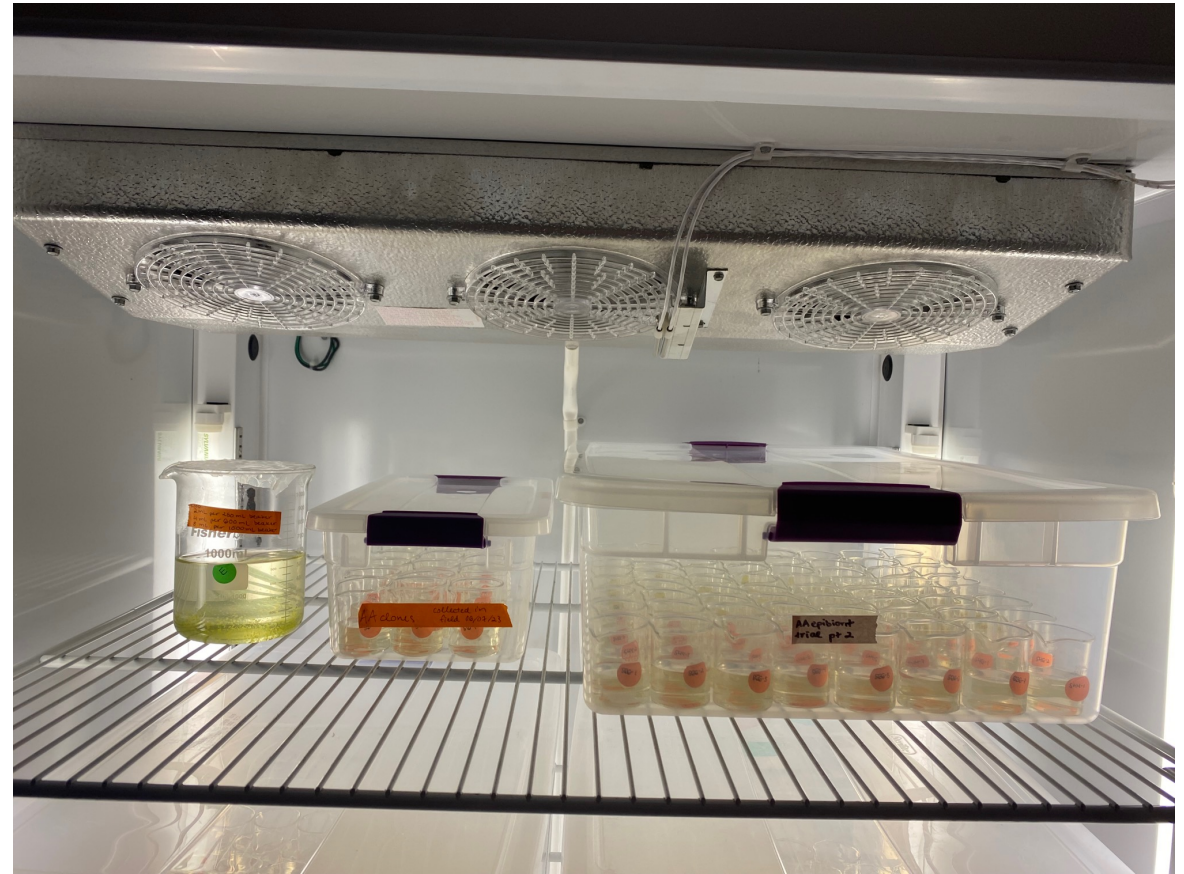
Epibiont ???



Transmission

Epibiont trial – experimental design

- Very easy to culture epibiont in lab
- 1 infected + 10 uninfected



Virulence

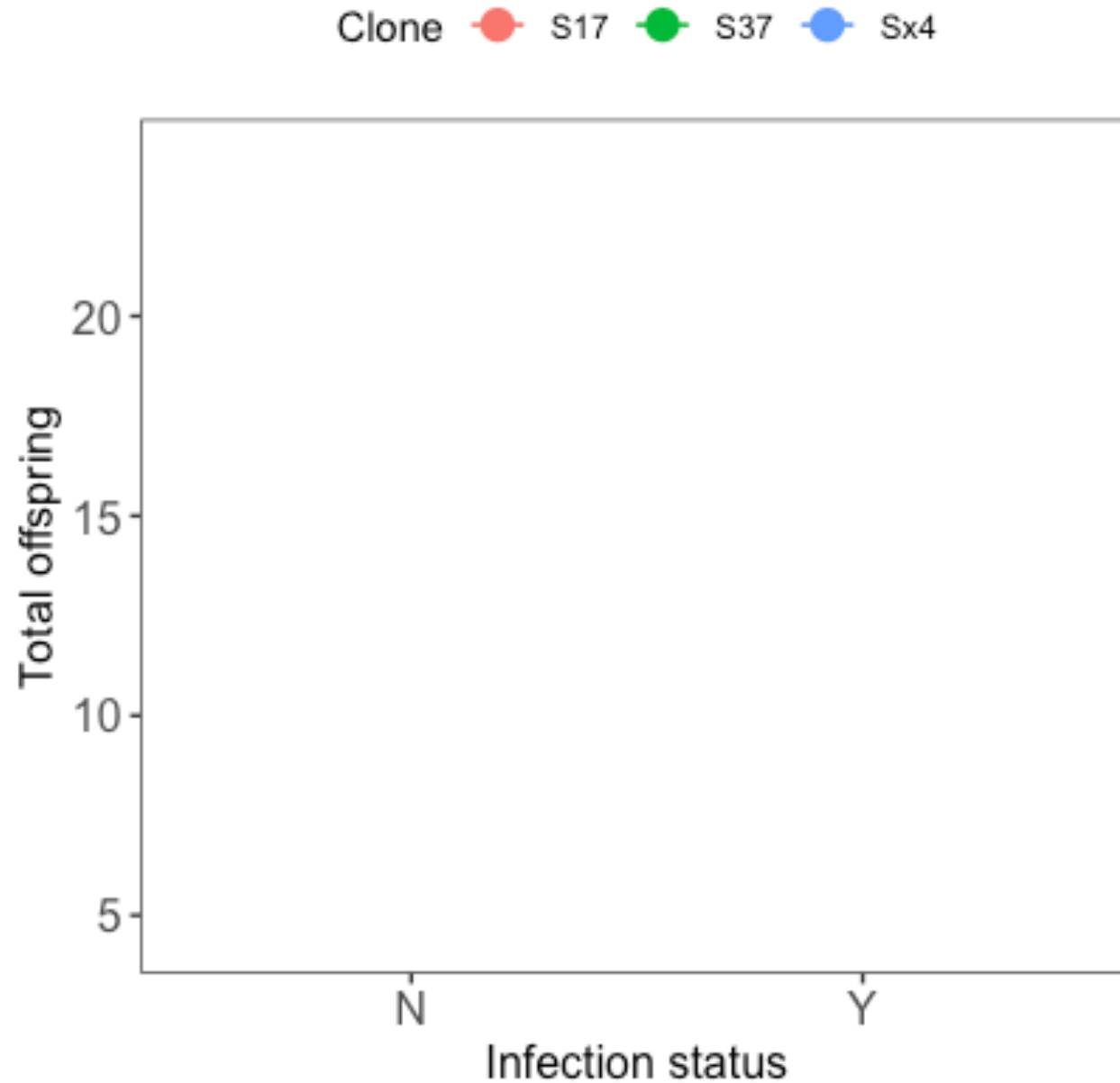
KEY FINDING
Fitness effects



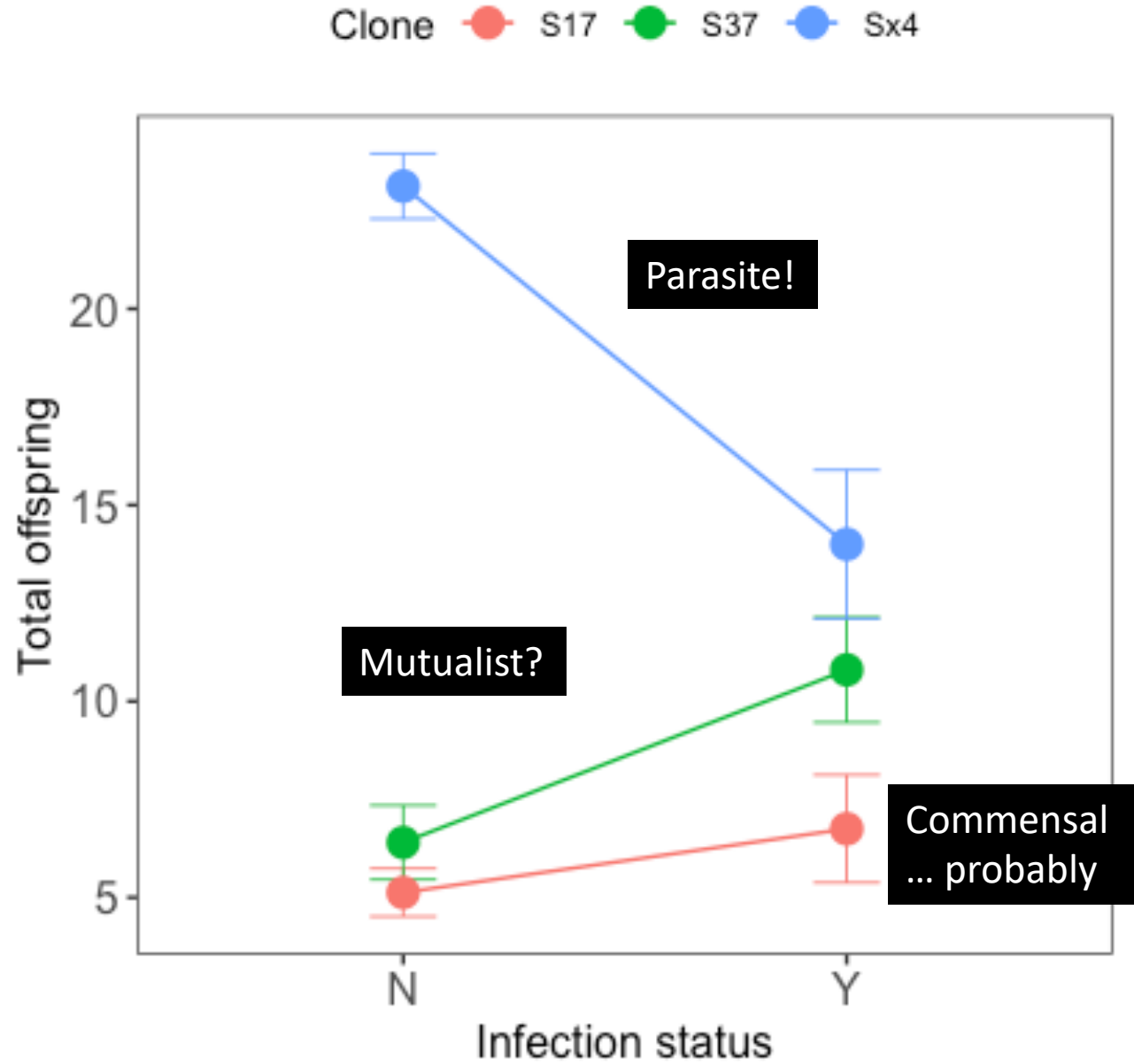
Reproduction: a strong indication of the health and happiness of the daphnia

Fecundity = the ability to produce offspring; fertility

What did we find? (so far)

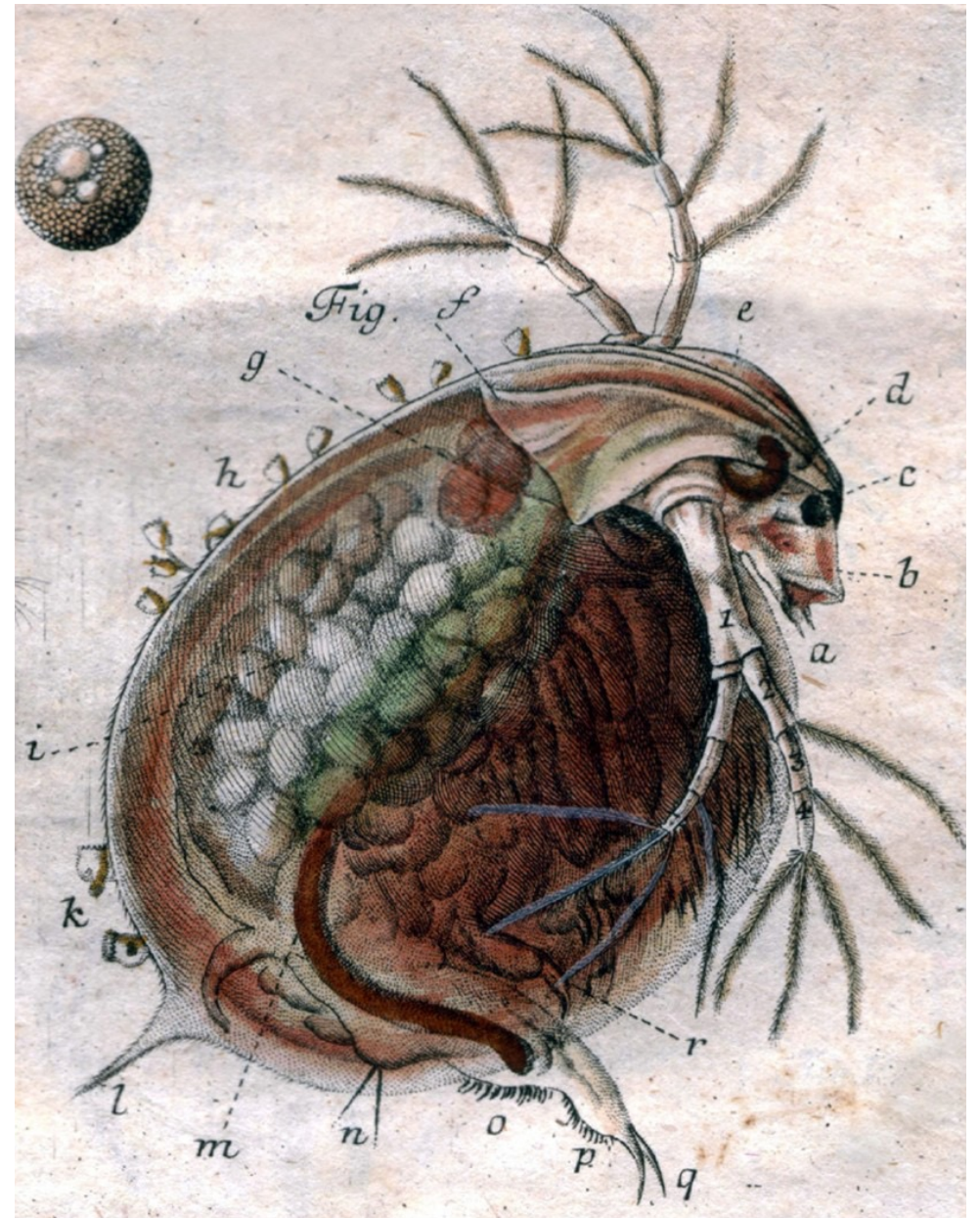


What did we find? (so far)



Identifying the epibiont

Rhabdostyla ?



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