Parasite Competition in Barnacle Populations

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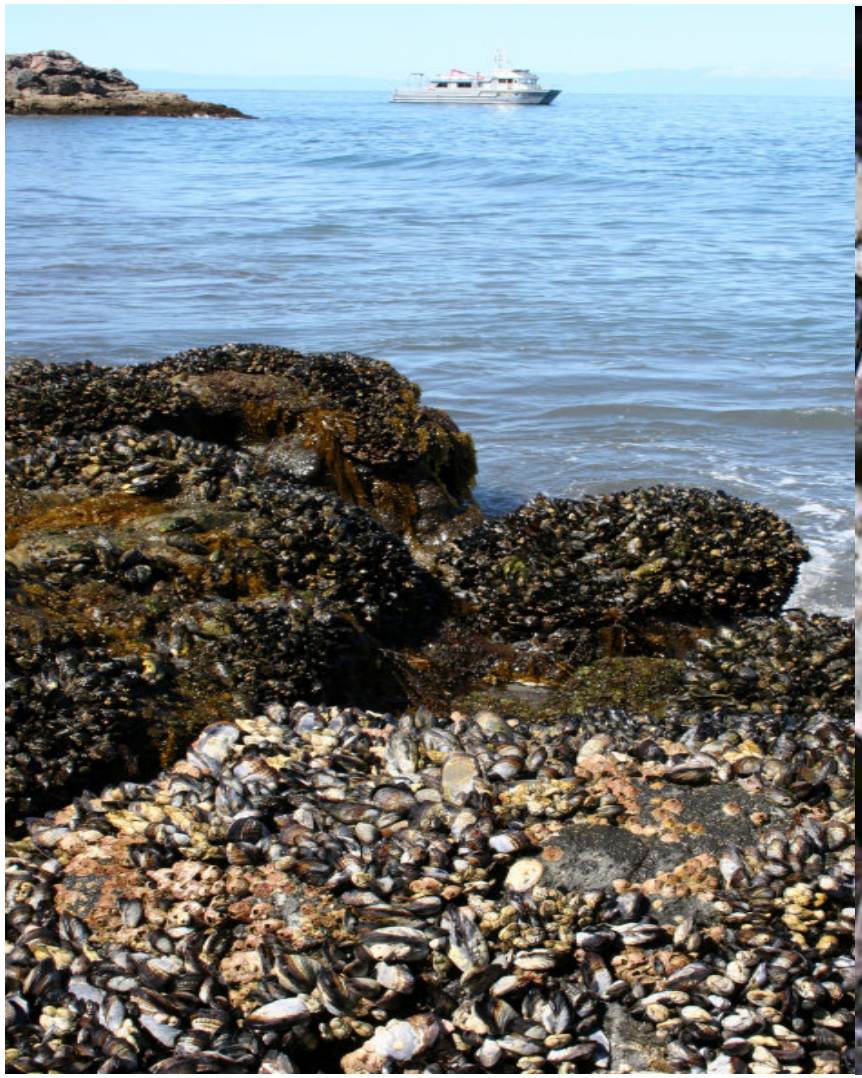


Barnacle*: Chthamalus Fissus*

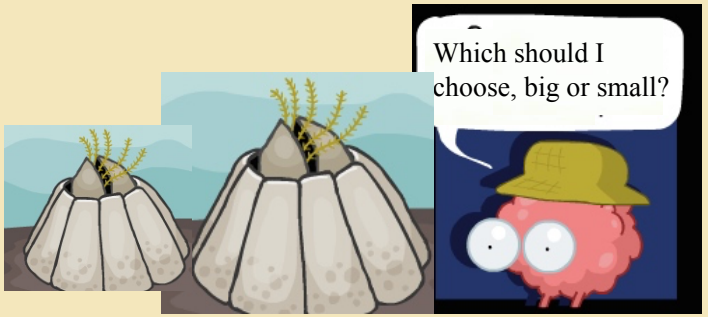
- Barnacles are globally distributed
- Area of study up to 90% infection

Parasite: Hemioniscus Balani

- Does not affect barnacle survival
- Reduces barnacle reproduction
- Competitive

1. Multiple parasite infections will increase with higher infection rate

2. Parasites prefer barnacles of the same size



3. Multiple infections will increase net eggs produced

Multiple infections = More eggs

4. Competition: One parasite will be dominant in a multiple infection

From Field to Lab

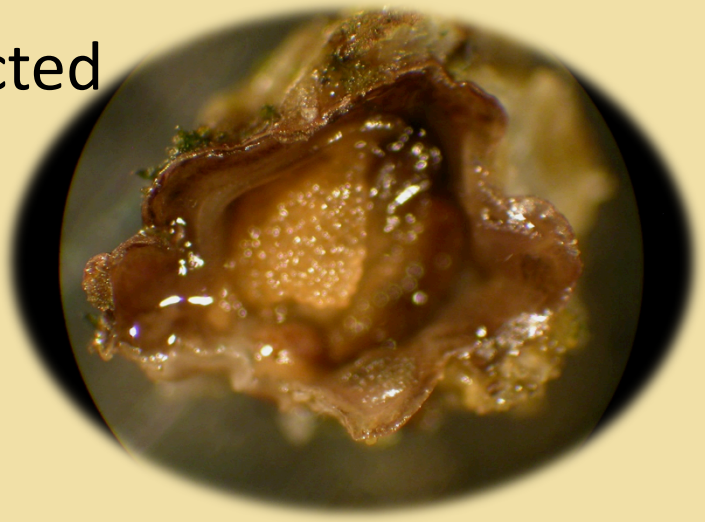
- Collection
- Preservation
- Observation

Parasite Detection

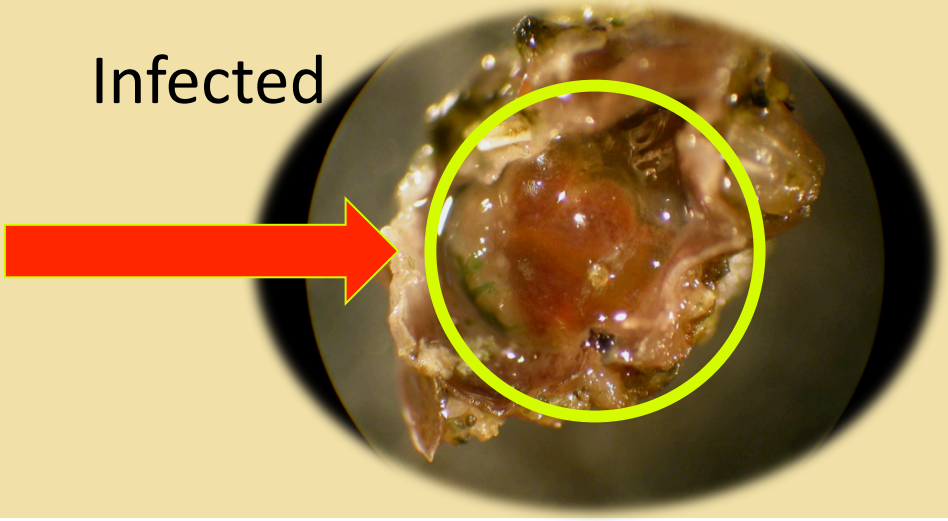
Variables to consider:

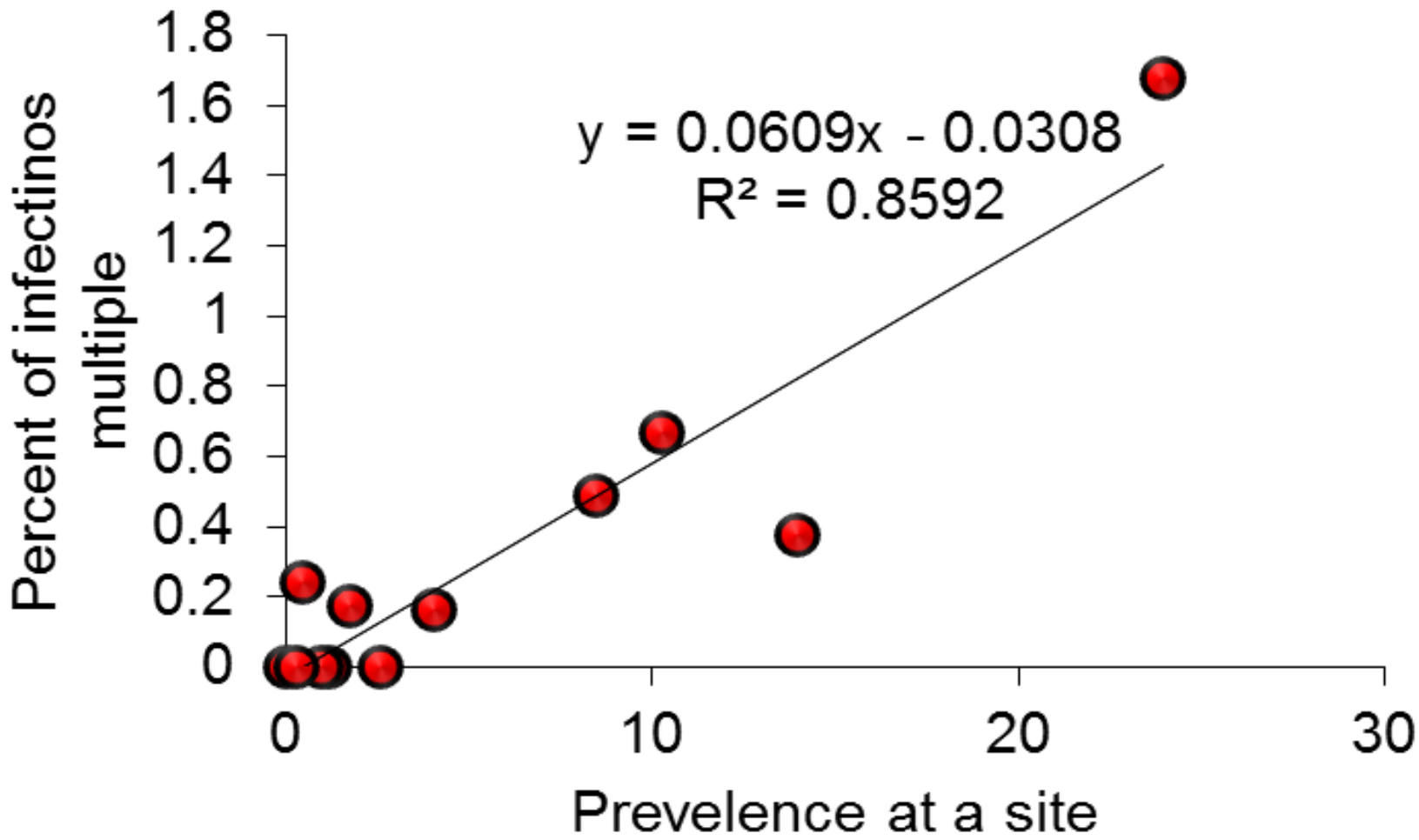
- Size
- Multiple infections
- Egg count

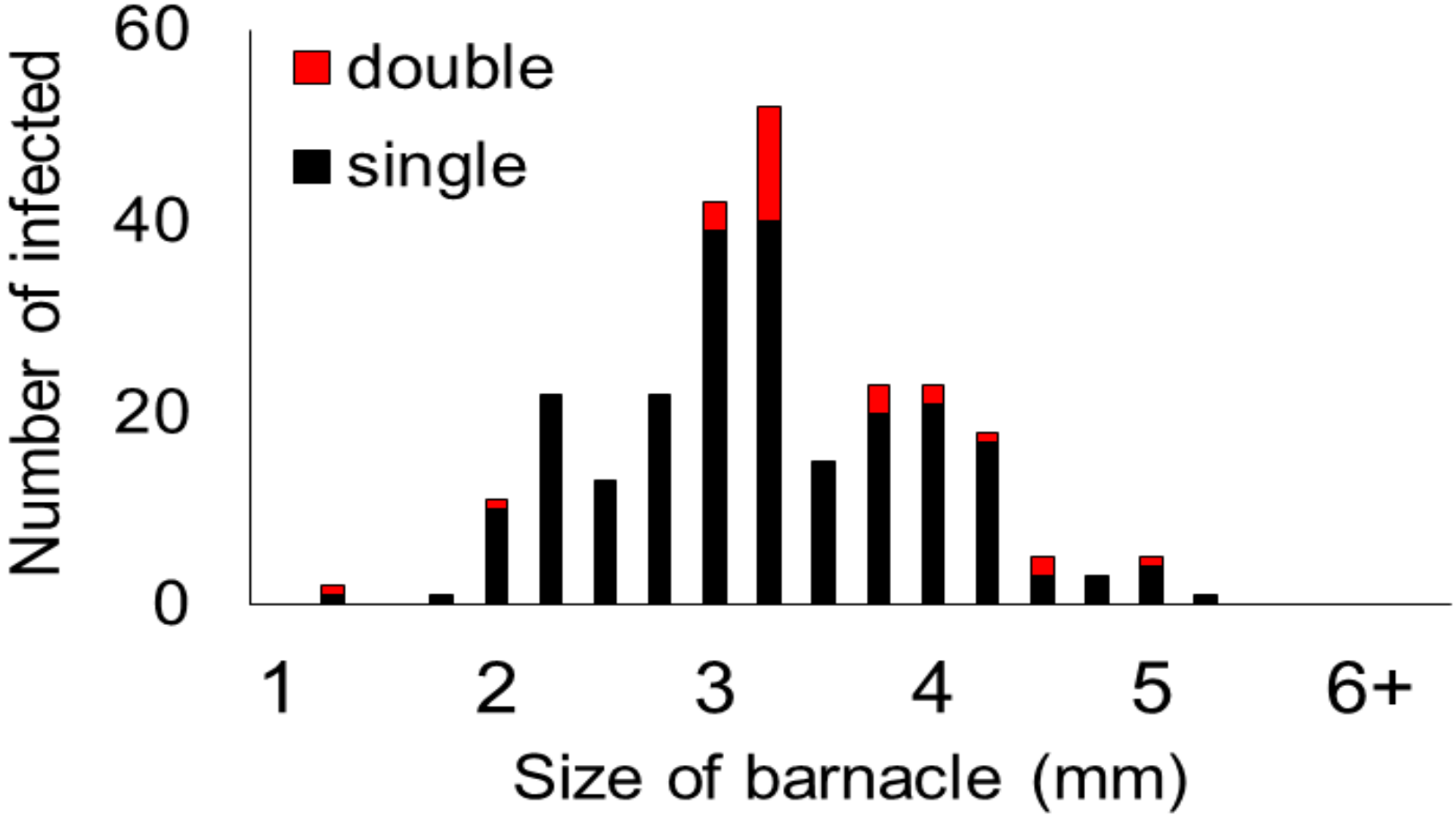
Uninfected

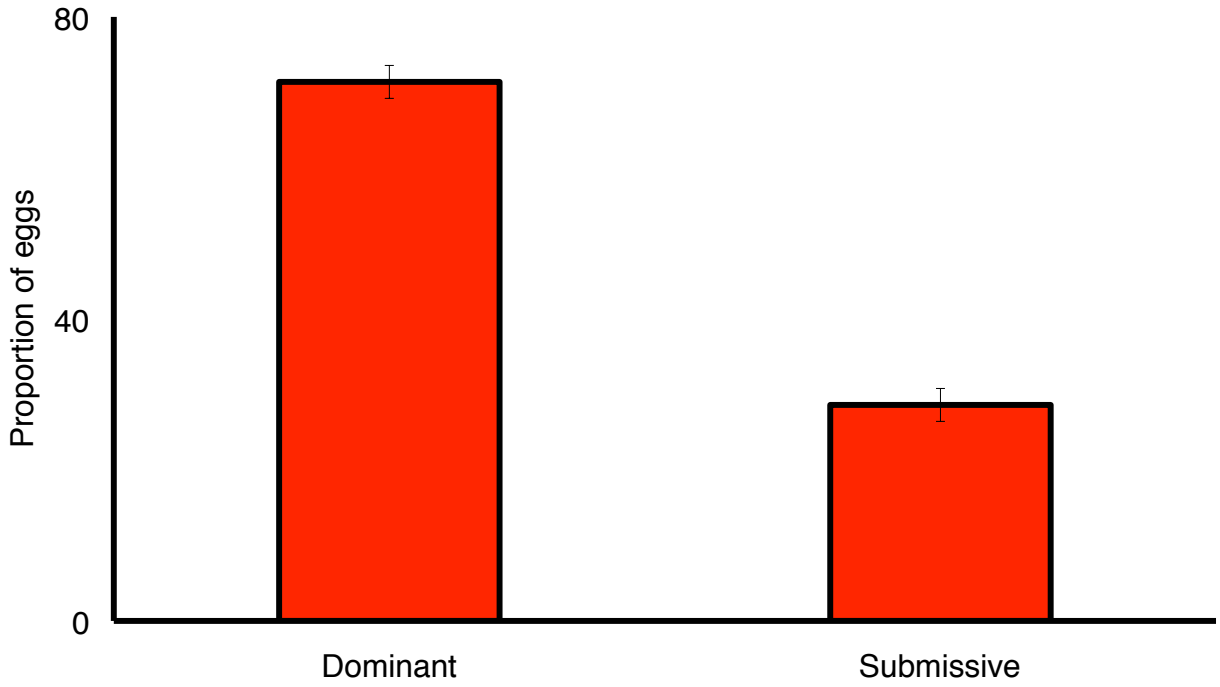


Infected




y = 0.0609x - 0.0308
R² = 0.8592
Percent of infectinos multiple
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
10
20
30
Prevelence at a site


60
40
20
0
Number of infected
double
single
1
2
3
4
5
6+
Size of barnacle (mm)



- Egg production: 78% Dominant Parasite
  22% Submissive Parasite

Conclusion

- With prevalence comes higher rate of infection
- Parasite prefers intermediately sized barnacles
- Egg yield doesn’t change with multiple infections
- Dominant parasite produces 70% of eggs