



Bean beetle babies with daddy – issues, what’s the deal?

Hypothesis: Increased bean beetle male-male competition will negatively affect numbers of juvenile emergences

Intro by Mr. Bean

“I was abandoned as a baby and I’ve beAn busy copulating ever since. I don’t eat, I don’t drink and I certainly don't have time for family matters!”

Results

- No effect between emergences from eggs laid & ratio of males (p-value = 0.13)
- Our control differed from experimental test, with more eggs (78.3) per female but less emerging from these (30.7)
- Numbers across the experimental tests were similar, with 63.7-67.3 eggs laid & emergences from 46.3-49 (F-value = 2.9)

Discussion

- Our results contradict our hypothesis; beetles reproducing with a 1:1 ratio were least successful and 1:3 were the most successful. This indicates the ideal male : female ratio is somewhere between 3 and 7 males to 1 female
- This pattern suggests a trade-off between female longevity and fecundity
- Adaptive plasticity causes females in low density populations to produce large numbers of small eggs, and small numbers of larger eggs in high population densities. The latter life history was more successful in our lab setting
- The trends seen here come from a limited dataset with no statistical significance,
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Materials & methods

- A total of 9 petri dishes with approx. 120 beans each, 6 experimental, 3 control
- 3 x 7 males & 1 female, 3 x 3 males & 1 female, 3 x 1 male & 1 female (control)
- Count eggs & remove dead (2 weeks), count juveniles (5 weeks) dead or alive

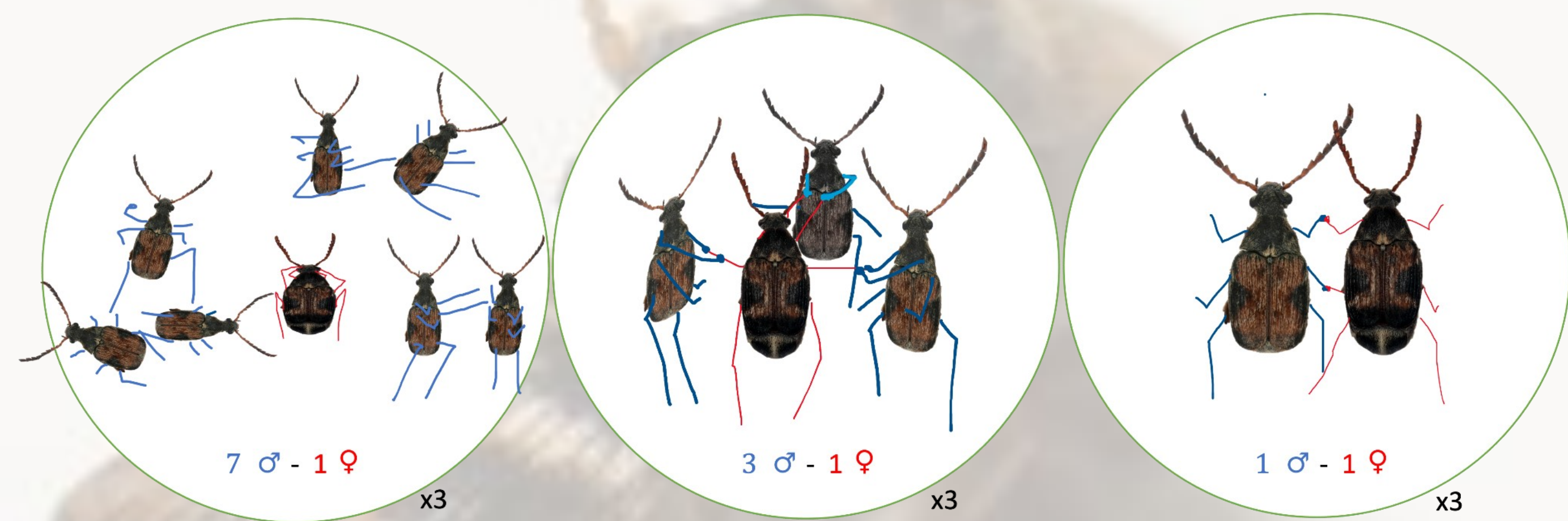


Figure 1. Petri dish setup with varying male ratios and 1 virgin female in each.

Number of emergences in relation to total of eggs laid in different male ratios

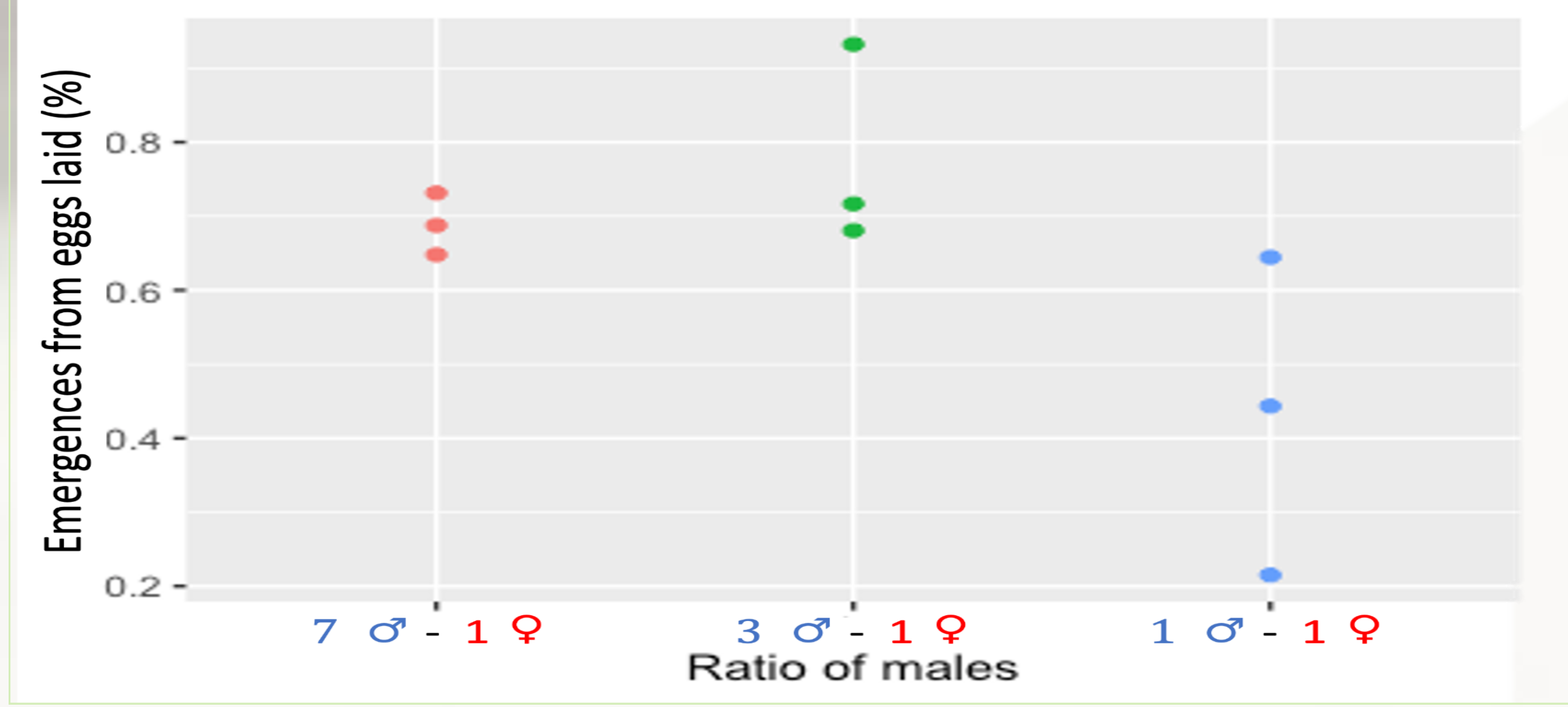
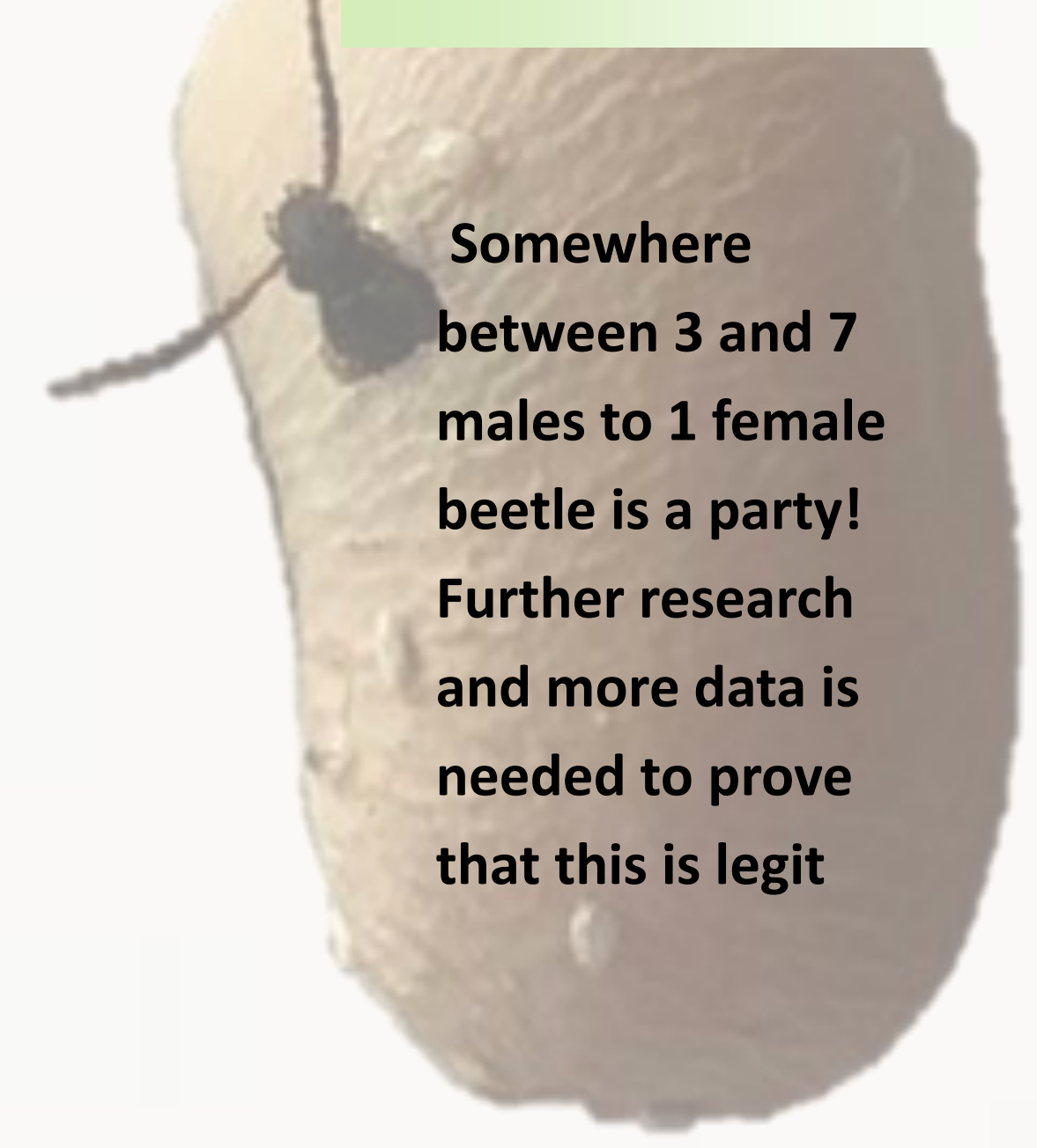


Figure 2. Scatter plot showing the proportion of juvenile emergences from eggs for each male ratio tested. Each dot represents emergences in 1 petri dish

Take home bean



Somewhere between 3 and 7 males to 1 female beetle is a party! Further research and more data is needed to prove that this is legit

Contributors



SCAN ME

