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Beetle Ballads

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Sexual Selection: Male Competition & Female Choice

Old View

- Winning fights = Winning females



New View

- Winning fights is only the beginning!
- Behavior beyond male competition



Japanese Rhinoceros Beetles

- Fierce competition for resources
- Males “sing” to court females after fighting



Research Questions

- 1) Are females successfully choosing higher quality mates?
- 2) If so, what characteristics are females using to distinguish male “quality”?

Courtship & Mating Replication

- 62 random pairings of 42 male & 42 female Japanese rhinoceros beetles
- Mating box equipped with:
 - Food source
 - Microphone/Video Camera

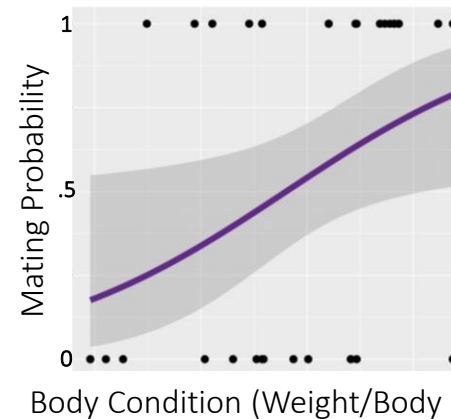
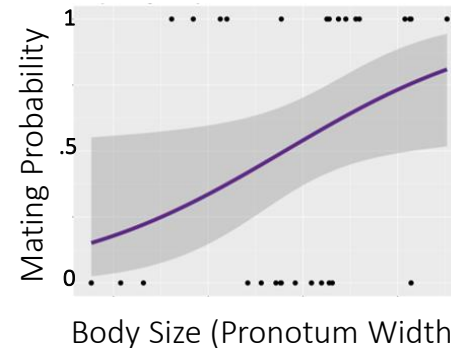


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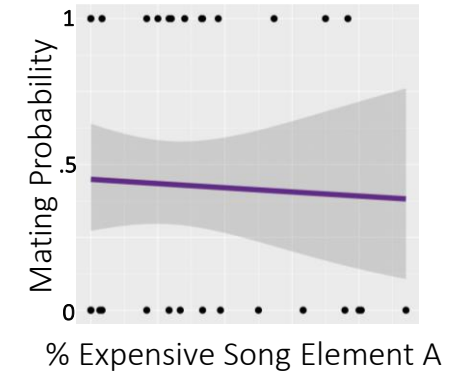
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Females Choose High Quality Mates!

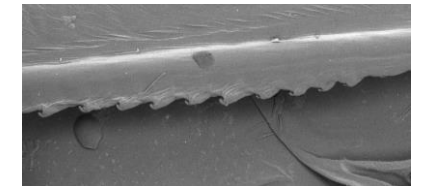


Song Length & Proportion: Not the Story!



Conclusions/Future Research

- Courtship in Japanese rhinoceros beetles exemplifies the ‘New View’ of sexual selection in resource dependent mating systems.
- Proportion & length of courtship songs show no correlation to male quality, females are still distinguishing high quality males from low quality males.
- Future Research: Differences in song production mechanism produce different frequencies and trill rate, allowing females to choose high quality males.



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