Effects of relaxed selection on female response to male song in crickets (*Acheta domesticus)*

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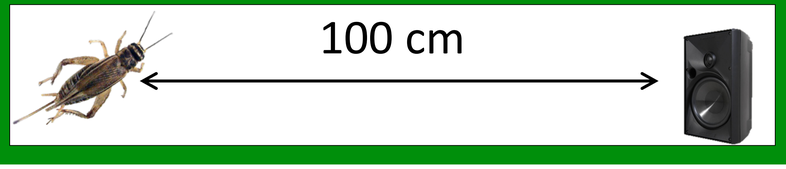
INTRODUCTION

- Selection acts differently on animals in captivity and in natural conditions
- Individuals bred in captivity for many generations may exhibit traits different from their wild counterparts
- We chose to use The Common House Cricket, *Acheta domesticus*, because they are found feral in the United States and have also been extensively bred for live pet food
- This makes them ideal candidates to observe the effects of relaxed selection
- Male crickets produce song to attract females
- In overcrowded conditions of captivity, there is less selective pressure for females to be responsive to male song
- We hypothesize captive female crickets are less sensitive to sound and respond more slowly to male song

METHODS

1. Received crickets from a natural population in Riverside, California. Ordered crickets from Fluker's Cricket farm (~105 generations in captivity).
2. Tested each individual once between 6-9 days post eclosion
3. Determined how long it took females to respond to male song by recording time for them to travel to and touch the speaker
4. Ended trial at 5 minutes and recorded final distance if cricket failed to touch



CITATIONS

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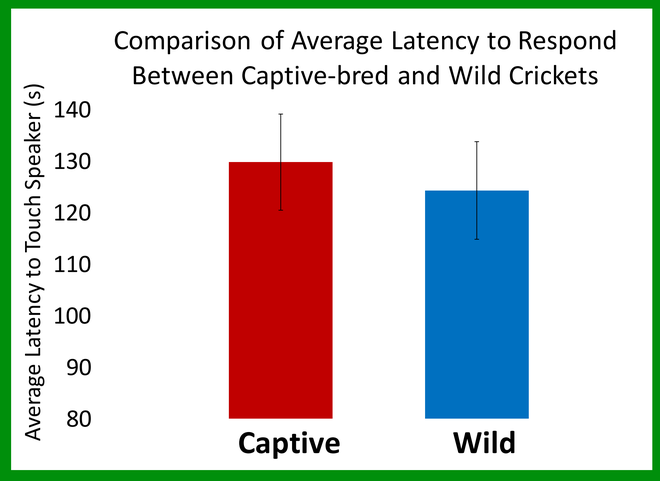
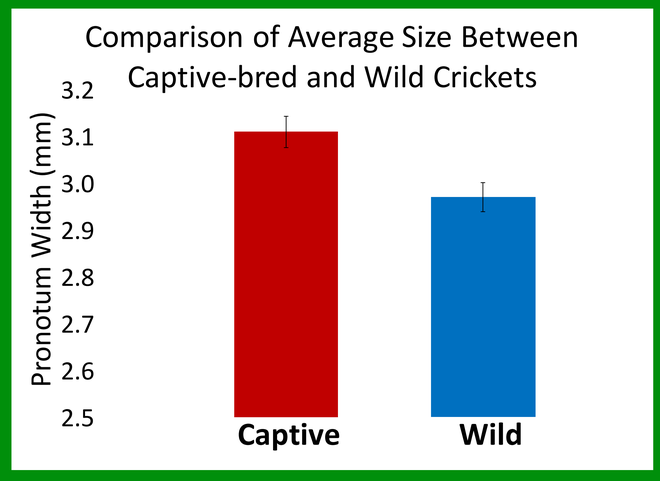
RESULTS

- The average latency to respond for captive-bred population was **not** significantly different from that of the wild population.
- Captive-bred individuals were significantly larger than wild individuals.

N = 45 (Captive)
N = 50 (Wild)

T-test (two-tailed)	d.f.	T stat	P-value
Latency to respond	92	0.65	0.519
Pronotum Width	122	3.04	0.003**





CONCLUSIONS

- Although further study is needed to determine why we did not see a significant difference in latency to respond between captive-bred and wild crickets, this result may indicate that there is still a selective force on this trait in captivity.
- The significantly larger size of captive-bred individuals may be due to a relaxed selection on hiding ability. Since crickets rely on hiding and camouflage for defense against predators, a captive environment without predators may enable larger crickets to survive. Further study is also needed to test this hypothesis.

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