

## **Abstract**

### **Differential Sperm Allocation by Male Sailfin Mollies.**

**PI: Caitlin Gabor, Biology**

A major paradox of evolutionary ecology is the occurrence of all-female species that mate with males of other species in order to initiate egg development. The sperm of males of the parasitized species does not contribute genes to the females' offspring. Here, a conflict of evolutionary interest exists between the benefit to the all-female species of mating with males, and the potential cost to those males in terms of reduced representation of their genes in subsequent generations. We studied this conflict using the all-female Amazon molly, *Poecilia formosa*, and the closely related sailfin molly, *P. latipinna*.

We tested two hypotheses in relation to this paradox: (1) Male sailfin mollies will produce less sperm in the presence of Amazon mollies than when in the presence of female sailfin mollies. (2) Male sailfin mollies from populations that occur with and have evolutionary experience with Amazon mollies will show a greater decrease in sperm production to Amazon mollies than males from populations that do not naturally occur with Amazon mollies. We found that previously demonstrated male mate choice for female sailfin mollies over Amazon mollies is revealed in sperm production. Males from a population that does not occur with Amazon mollies and males from a population that does occur with Amazon mollies produce more sperm when in the presence of a conspecific female than when in the presence of a heterospecific female. However, there was no significant difference in the amount of sperm produced between the two populations. Thus, our data support the first hypothesis but do not support our second hypothesis. We suggest that differential sperm production could also play a role in prezygotic reproductive isolation in bisexual species complexes that occur in sympatry.

## **Publication**

Aspbury, A. S., & C. R. Gabor. 2004. Discriminating males alter sperm production between species. *Proceedings of the National Academy of Sciences* 101:15970-15973.

**(FEATURED IN SCIENCENOW, SCIENCE MAGAZINE'S ONLINE NEWS SERVICE 11/1/04; CBC RADIO QUIRKS AND QUARKS, 11/6/04; PNAS ARTICLE HIGHLIGHTS, 11/1/04; WISSENSCHAFT ONLINE, 11/5/04; LE SCIENZE ONLINE, 11/6/04)**

## **Presentation**

A. S. Aspbury and C. R. Gabor Differential Sperm Priming by Male Sailfin Mollies (*Poecilia latipinna*). AMERICAN SOCIETY OF ICHTHYOLOGISTS AND HERPETOLOGISTS.

## **Support from resulting from REP award**

NSF-DIB, Animal Behavior, 2004 - 2007 \$299,497  
"Species Recognition versus Mate Quality Recognition by Sailfin Molly  
Males Asexuals looking for sperm" Grant # 0415808