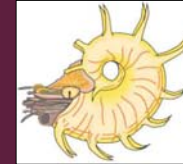




Mate Selection in Satin Bowerbirds



Arunima Shukla
College Park Scholars: Earth, Life, & Time
University of Maryland, College Park
Major: Linguistics and Psychology
ashukla@umd.edu



May 1, 2009

Abstract

Since my majors are in the humanities and behavioral sciences I wanted to do something completely unrelated to my majors in the physical or life sciences. I decided to help out researchers studying sexual selection in bowerbirds. Undergraduate research assistants like me watch videos of satin bowerbirds that were collected in Australia during the mating season, and code all the relevant mating behaviors.



Me watching a video of a bower and recording the behaviors of the bower owner.



Male bowerbird displaying to female

Source: http://pnpphotos.com/stock-photos.com/2008/02/14/bowbird_courtesy.jpg

Methods

I was trained by graduate students in the research group to identify the mating/display behaviors and code them using Microsoft Excel. I had to identify birds by their band colors and code what behaviors they did and at what time they did it. I was assigned specific bowers to code.

I had to code every time the male bird displayed, whenever there were visitors at the bower like other adult males out to destroy bowers and steal decorations to impede that bower owners mating success, juvenile males learning the how to of bower building and displaying to females, or females checking out the bower to see if the owner is worthy of copulation. The males sometimes display to empty bowers (perhaps to practice) and every time a female visits they try to court it by displaying. I had to code every time a male displayed what decoration it had in its beak (decorations include: yellow flowers, blue flowers, insects, and snail shells), whether it was a courtship display, and when the courtship turned into a successful copulation.

Materials

- Hi-8 video tapes
- Laptops with Microsoft Excel
- TV and Hi-8 player
- Remote Controls
- Behavior Coding Sheet
- Identification Bands
- List of banded birds
- Floppy Disks

Discussion

Before I started helping out with this research I barely knew anything about bowerbirds and had no idea that that their mating displays are unique, and help give insight into the complex displays that males of various species have developed through evolution. The videos were intriguing. The females choose mates depending on how much they like the male's display and the quality of his bower construction. Each bower I scored had a unique owner with a distinct personality and display style. Some males got a lot of mates and some very few. I saw how the males try to sabotage each others chances of mating success by destroying each others bowers and stealing decorations. I learned that the juvenile males are green like the females and don't become blue till they mature. I also learned that satin bowerbirds have a fondness for yellow and blue decorations and the males with better decorations and better looking bowers got a lot more female attention. I also got to see some unique visitors like kangaroos and snakes when they happened to pass by the bower. This was a great experience and I learned a lot from it. I would recommend this to anyone regardless of their major.

Introduction

I worked in the video room of the Borgia Lab in the Bio-Psyc Building. Dr. Borgia and his research group study sexual selection in bowerbirds as model for understanding the evolution of male display behaviors. Every year the research team goes to Australia during the mating season and collect several hi-8 video tapes of different bowers. The bowerbirds being monitored are banded by a unique tri-color combination. As an undergraduate research assistant I was assigned specific bowers to watch and code the mating behaviors that occurred in the bower.



Stack of hi-8 video tapes



Identification bands

Acknowledgements

I would like to thank Dr. Borgia for presenting undergraduate students like me the opportunity to help out in the research. I would like thank Linda Cendes for training me and also Jason Keagy, Reimi Hicks and Archer Larned for helping me out during my video watching.

Most of all I want to thank Dr. Holtz and Dr. Merck for making ELT one of the most memorable experiences of my life. I would never have been pushed to go beyond my majors in this way and help out with research in a topic of evolutionary biology if I wasn't in ELT.

