

## Lab 9: Australian Ground Cricket Behavior

*Please note: Do not disturb the crickets. Do not put your face directly next to the Petri dish or aquarium. Try to remain calm and quiet while observing. Do not let the crickets escape!! Lab quiz #2 is next week!!*

### GOALS:

#### You should be able to.....

- ★ Distinguish the physical differences between male and female crickets.
- ★ Use appropriate vocabulary to explain how crickets create and sense sound.
- ★ Label two diagrams that show 1) file & scraper 2) tympanic membrane
- ★ Describe the differences between the three types of cricket songs.
- ★ Compare and contrast the behavior of your male cricket during isolation, introduction of a female, and introduction of another male.
- ★ Use your observations to identify cricket behaviors that show submission, aggression, and courtship.
- ★ Describe the simple experiment you conducted to determine the cricket's response to light; explain how you would adjust this experiment to make a more valid conclusion about cricket behavior.
- ★ Describe the experiment you designed and summarize your results.
- ★ Describe the aggressive behavior of a Betta fish.

### Key Terms:

- cerci
- ovipositor
- stridulation
- file
- scraper
- tympanic membrane
- mandibles
- palps
- spermatophore
- antennation
- calling song
- aggressive song
- courtship song
- grooming
- normal (isolated male) behaviors
- submissive behaviors
- aggressive behaviors
- fleeing
- pecking order
- hypothesis
- experimental control

### Introduction

- p. C-63: Listen to introduction & read top of p. C63. Take notes on terminology.

### Observations & Experiments

#### **I. Normal Behavior:**

- pp. C63-C64, C66, C68: Read procedure, then conduct observations & record results on p. C68
- Answer questions in section I on p. C66

#### **II. Courtship Behavior:**

- pp. C64, C66, C68: Read procedure, then conduct observations & record results on p. C68
- Answer questions in section II on p. C66

#### **III. Aggressive Behavior:**

- pp. C64, C66-C68: Read procedure, then conduct observations & record results on p. C68
- Answer questions in section III on pp. C66-C67

#### **IV. Phototaxis:**

- pp. C64: Read procedure, then conduct observations. You can record your observations in a column **you make** on page C68.
- Write a hypothesis about the behavior you observed. Use an "If.....then, ....." statement.
- What might be changed or added to this experiment to make it more scientifically valid?
- Answer questions in section IV on p. C67

### **V. Design Your Own Experiment:**

Design and conduct an experiment that will teach you something about cricket behavior. Check with me before conducting your experiment. Fill out the following before you begin:

What is your question? \_\_\_\_\_

What is your hypothesis? \_\_\_\_\_

What is your control? \_\_\_\_\_

Come up with a plan on how you will carry out your experiment and go for it! RECORD RESULTS on p. C68.

Was your hypothesis supported? \_\_\_\_\_ Why or why not?

### **VI. STATIONS**

View cricket wing under the dissecting microscope. Make a sketch labeling the file and scraper.

View the tympanic membrane of a cricket under the dissecting microscope. Make a sketch.

p. C67: Answer questions in section V.

Observe Betta fish aggression. Lift the paper that is located between the two fish bowls. Record what you observe below.